CHAPTER 5
ANALYSIS OF MATCHED SIPP/SSA DATA

I. INTRODUCTION

In this chapter, we present descriptive and econometric analyses of the pre-reform period using the SIPP/SSA matched data. The primary objective is to build the foundation for a design option that uses these data, plus future SIPP panels, to evaluate the impacts of welfare reforms on SSI. Specifically, we:

- Provide an overview of the matched files for the 1990, 1991, 1992, and 1993 SIPP panels and discuss data issues of importance to the evaluation options;

- Present descriptive statistics for SIPP respondents who were SSI recipients or AFDC recipients when first interviewed. The statistics presented are quite extensive, and because they are likely to be of general interest we present much more information than is directly pertinent to evaluation options for this project. The discussion of the statistics is, however, focused on information of direct relevance to this project;

- Present descriptive statistics of individuals who applied for SSI in the five years following their first SIPP interview ("post-SIPP" applicants). These SSI applicants are of substantial interest because they represent the large number of persons who applied in the period from 1990 to 1996. Among other things, we can directly observe transitions from AFDC to SSI during this period. We also present statistics for those who are first awarded SSI benefits after they are initially observed in SIPP (post-SIPP recipients). Again we present many statistics that are likely to be of general interest, but confine the discussion to information of direct relevance to this project;

- Assess potential "target" and "comparison" groups that might be used in an evaluation option; and

- Estimate probabilities (hazard) models for SSI applications and allowances from 1990 to 1996.

As discussed in the previous chapter, it appears that a substantial number of adults, especially young women, may have shifted from participation in AFDC to participation in SSI since 1988. There is also substantial evidence of such shifting among children (Garrett and Glied, 1998). The matched data allow us to examine this directly. More generally, we can assess the extent to which the populations served by AFDC and SSI "intersect" with one another - have similar characteristics, participate in both programs at different times, and live in families that participate in both programs - for both adults and children. It is this intersection that creates the potential for interactions between the programs. We can also obtain a sense of how the intersection has changed since 1990, by following those who applied for SSI since observed in SIPP.

The detailed descriptive statistics on demographic, health, and program characteristics of SSI and AFDC recipients at the start of each SIPP panel provide general information about these two caseloads during the period 1990–1993, and also tell us the extent to which the two populations intersected at that time. We then present the characteristics of "post-SIPP" SSI applicants and recipients, which we define as SIPP respondents who became applicants and recipients in the

five years following their first SIPP interview. We assess differences between these applicants or recipients and those who were SSI recipients when first interviewed, especially with respect to their prior AFDC status. We then conclude the descriptive analysis with an assessment of characteristics of several demographic and income groups that could be used as target or control groups in a future analysis.

The econometric analysis serves three purposes:

- To assess the feasibility of estimating econometric models for specific groups of interest during the pre-reform period, as well as in a design option;[63]

- To generate baseline models of SSI applications and allowances during the pre-reform period; and

- To further explore identification of target and comparison groups, including development of a probabilistic methodology.

The main feasibility issue is sample sizes for the groups of most interest to a future evaluation: young women (age 18 to 40) and children in low-income families. While the sample sizes for both are very large in SIPP, only a very small number apply for SSI after they are observed, and an even smaller number obtain allowances. It is not clear *a priori* whether these sample sizes are sufficient to produce reasonably precise parameter estimates. Because the number of applicants from each group of interest is so small for each individual SIPP,[64] we pool data from the 1990 through 1993 SIPP panels to estimate the models presented here.

A second important issue is the feasibility of estimating the effects of state-level factors. A potentially important advantage of the SIPP/SSA analysis, over the pooled state-level analysis presented in Chapter I, is that both individual and state-level factors can be included in the econometric models, not just state-level factors. State-level factors are very important to a future evaluation because of the state-specific nature of reforms under TANF. Small applicant samples from each state in the SIPP may, however, preclude accurate estimation of the effects of state-level factors, even when samples from multiple SIPP panels are pooled.

We present a series of application and allowance models for young women, young men, and children from low-income families during the pre-reform period.[65] We model the "hazard rate" for first applications and first allowances in the period after a respondent is first observed in SIPP and before the passage of PRWORA (in August 1996). The application hazard rate is the probability that a respondent applies for SSI in a given period conditional on not having applied in an earlier period. The allowance hazard is defined analogously. In all models, factors that affect a respondent's hazard rate include: characteristics of the individual when first observed in SIPP, state-level factors (e.g., the unemployment rate), duration of time since the respondent was

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[63] We define the pre-reform period as the time between the first SIPP interview and July 1996 (the month prior to the passage of PRWORA). Hence, because we are using multiple SIPP panels, the starting point for the pre-reform period varies by the starting point of each SIPP panel.

[64] Of the four SIPP panels, the 1990 panel includes the most post-SIPP applicants in the five years after the first interview: just 194 young women and 294 children. See *Appendix Exhibit E.8*.

[65] An outline of these models was presented in Lewin (1998a) for SSI applications.

observed in SIPP (as long as 6.5 years, for 1990 SIPP respondents), and the year in which the respondent is first observed in SIPP.

We also experiment with models in which the year of application or allowance interacts with variables that identify individuals whose applications and allowances are more likely than others to be affected by factors that also affect AFDC participation, including AFDC reforms. These models allow us to assess whether there were shifts in the hazards for such individuals during the pre-reform period relative to hazards for others – a phenomenon that is suggested by the analysis in the two previous chapters.

In interpreting the findings, it should be kept in mind that they are for first applications or allowances only. Significant shares of all applications in any year are from individuals who have previously applied, and significant shares of SSI recipients have multiple participation spells. SIPP respondents who first applied for (received) SSI benefits before they were observed in SIPP are not included in the samples for the first application (first allowance) models.

II. DESCRIPTION OF MATCHED DATA FILES

A. SIPP Data Description

For our descriptive analysis, as well as our econometric analysis that appears in the next section, we use data from the 1990, 1991, 1992, and 1993 SIPP panels. These data represent the most recent completed SIPP panels available. In general, each of these panels includes longitudinal information on households, families, and individuals over a 32-month period.[66] In *Exhibit 5.1*, we summarize sample sizes and interview dates for each of the SIPP panels used in this report.

Exhibit 5.1
Summary of the 1990-1993 SIPP Panels

Panel	First Interview	Last Interview	Number of Waves	Eligible Households[67]	Original Sample Members[68]
1990	Feb. 90	Sept. 92	8	23,627	61,900
1991	Feb. 91	Sept. 93	8	15,626	40,800
1992	Feb. 92	May 95	10	21,577	56,300
1993	Feb. 93	Jan. 96	9	21,823	56,800

Source: U.S. Bureau of the Census (1998) "Survey of Income and Program Participation Quality Profile" Third Edition (http://www.sipp.census.gov/sipp/qprofile.htm)

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[66]The 1992 and 1993 SIPP panels include longitudinal information over a 40 and 36 month period, respectively.

[67] Eligible households are households sampled for wave 1, including both responding and nonresponding households.

[68] Number includes an estimate of the persons in wave 1 noninterviewed households.

Each SIPP panel contains detailed monthly demographic, program, employment, and health characteristics of a nationally representative sample. The sample includes individuals in the non-institutionalized resident population living in the United States.[69] To facilitate the process of collecting data, SIPP panel samples are divided into four random subsamples called "rotation groups." Each rotation group is interviewed separately about their activity over the previous four-month period. Together, the four rotation groups comprise one interview "wave."

During each SIPP interview, "core" and "topical module" questions are asked of adults age 15 and older. Information on children in the household is also gathered during the interviews of adults. The core questions include demographic, program participation, and employment information over the previous four-month period. These questions are repeated during each wave of interviews. The number of interviews in each SIPP panel varies, but since 1990 each panel had at least eight waves of interviews.

SIPP topical modules are implemented at various points in each panel. In general, the topical modules vary by each interview wave, though some topical module questions are repeated in various waves of each panel. We use the following three topical module files from each SIPP panel: Assets and Liabilities, Recipiency History, Functional Limitations, and Disability. We use the Assets and Liabilities topical module to obtain information on household wealth. We use the Recipiency History topical module to obtain information on past participation in AFDC and Food Stamps. Finally, we use the Functional Limitations and Disability topical module to construct various measures of disability and health status. A summary of the variables used from the Functional Limitations and Disability topical modules appears in ***Exhibit 5.2***. The measures we construct are similar to those used by McNeil (1993), Kruse (1997), Lahiri, Vaughan, and Wixon (1995), and Hu, Lahiri, Vaughan, and Wixon (1997).

B. Matched SSA Records[70]

SSA created restricted research files by matching SSA records with the 1990, 1991, 1992, and 1993 SIPP panels. The individuals included in the SSA files were selected based on their participation in one of the SIPP panels.[71] Individuals were matched using Social Security Numbers (SSNs). The Census collects information on SSNs during their SIPP interviews. As part of the ongoing SIPP program, the Bureau of the Census and SSA validate SSNs for SIPP sample members in the course of normal survey operations. An attempt is also made to locate SSNs for persons for whom an SSN is not reported in the survey (except for persons refusing to provide their SSN). According to Lahiri, Vaughan, and Wixon (1995), in the 1990 panel, this process resulted in a "validated" SSN for approximately 90 percent of original sample members age 18 or older and for about 80 percent of persons under the age of 18.

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[69] The population for the SIPP interviews includes persons living in group quarters, such as dormitories, rooming houses, and religious group dwellings. Persons excluded from the SIPP population include crew members of merchant vessels, Armed Forces personnel living in military barracks, institutionalized persons, such as correctional facility inmates, residents of long-term care facilities, and citizens residing abroad. Foreign visitors who work or attend school in this country and their families are eligible for interviews.

[70] The matched file description is based on an SSA Memorandum from Howard Oberheu to Dennis Vaughan on September 8, 1997.

[71] Matched files also exist for the 1984 SIPP panel.

Exhibit 5.2
Functional Limitations and Disability Topical Module Variables

Variable	Response Options
General	
General Health Status	Poor, Fair, Good, Very Good, or Excellent
Required use of cane, crutches, walker or wheel chair	Yes or No
Functional Limitation	
Seeing words or letters	Reported Difficulty (Yes or No)?
Hearing normal conversations	Reported Difficulty (Yes or No)?
Having speech understood	Reported Difficulty (Yes or No)?
Lifting and carrying 10 lbs.	Reported Difficulty (Yes or No)?
Climbing stairs without resting	Reported Difficulty (Yes or No)?
Walking three city blocks	Reported Difficulty (Yes or No)?
Activities of Daily Living	
Getting around inside the house	Reported Difficulty (Yes or No)?
Getting in or out of a bed or a chair	Reported Difficulty (Yes or No)?
Taking a bath or shower	Reported Difficulty (Yes or No)?
Dressing	Reported Difficulty (Yes or No)?
Eating	Reported Difficulty (Yes or No)?
Using the toilet, including getting to the toilet	Reported Difficulty (Yes or No)?
Variable	**Response Options**
Instrumental Activities of Daily Living (IADLs)	
Going outside the home	Reported Difficulty (Yes or No)?
Instrumental Activities of Daily Living (IADLs) (cont'd.)	
Keeping track of money and bills	Reported Difficulty (Yes or No)?
Doing light housework	Reported Difficulty (Yes or No)?
Using the telephone	Reported Difficulty (Yes or No)?
Severe Functional Limitations, ADL, or IADL	
Severe Limitation	Respondent reported that s/he was unable or required person assistance to perform a specific Functional Limitation, ADL, or IADL.
Work or Housework Disability	
Presence of a limitation in the kind or amount of work s/he can do	Reported Limitation (Yes or No)?
Presence of a limitation in the kind or amount of housework s/he can do	Reported Limitation (Yes or No)?

We use the SSA files that were extracted from the Supplemental Security Record (SSR). The SSR contains detailed program information on SSI applicants and recipients, as well as ineligible family members whose incomes may be deemed available for support of the applicant or recipient. Variables include SSNs, residence, sex, race, birth date, death date, application date, payment status, wage income amount, and sample selection date. All of the core information on SSI applicants (e.g., race, sex, birth date), as well as some records that may change over time (e.g., application date for persons who filed multiple times), was taken from the earliest record on file. Information from the most recent SSR files, however, was used to construct current payment variables. The current payment variables, which include information on the individual's monthly eligibility status and payment amounts, are available on the matched files from 1974 (the first year of SSI) to 1998.

C. Advantages and Limitations

The primary advantage of the matched SIPP/SSA data is that it provides detailed descriptive information on a nationally representative sample of individuals who applied for SSI or became an SSI recipient between 1974 and 1998. These data can be used to observe detailed transitions of SIPP respondents before, during, and after their SIPP interviews. While transitions to SSI can be observed using SSA administrative data alone, the combination of survey and administrative data allows for the construction of detailed characteristics on SSI applicants and recipients, such as family, health, labor market, and other program information (e.g., AFDC and Food Stamps).

There are, however, important limitations to these data. First, detailed characteristics from SIPP interviews are only available over the life of the panel. For example, if we use data from the 1990 SIPP/SSA panel match, even though we can identify SSI transitions from 1974 to 1998, we can only identify information on employment and other program participation over the life of the panel (1990 to 1992). Attempts to characterize 1998 SSI recipients using information from, say, the 1990 panel, may be problematic because some characteristics, such as health, income, and family status will likely change as a person ages. In the future, this problem may be mitigated for the 1992 and 1993 SIPP/SSA matches when the *Survey of Program Dynamics* (SPD) is released. The SPD uses a sample from the 1992 and 1993 SIPP panels and follows them for the six years from 1996 to 2001. In theory, the SPD could be linked with the already existing 1992 and 1993 SIPP/SSA matches to create a ten-year database with both panel and administrative information. We discuss the SPD further in Chapter 6.

A second limitation of the SIPP/SSA data is that there is significant attrition bias in later interviews of SIPP panels.[72] In our descriptive analysis, we track the level of attrition by SSI and AFDC recipients. Although we do not report the results in the body of our report, the effect of attrition is evident in the descriptive statistics because distributions for variables collected after the first interview have "missing" cells (see *Appendix Exhibits E.1 – E.7* for more details),. To minimize attrition bias, we report information only from the first wave of each panel unless the information is not collected in that wave. For instance, we report income statistics for the first month of the respondent's panel rather than the first year. First-year income data appears in the appendix tables for those who continued responding for at least one year. We found no

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[72] This issue was raised during our last Technical Support Group meeting.

noteworthy differences between the distribution of first-month income and the distribution of mean monthly income for the year.

A limitation of the data set available for this analysis, but which could be corrected, is that the current matched file only contains data for first applications. Many applications are repeat applications, and while some are essentially continuations of earlier applications, many are not. We discuss this issue further in Chapter 6. A detailed discussion appears in Pickett and Scott (1996). A second limitation that can also be remedied is that most observations had missing data for the administrative impairment codes.

D. Sample for Descriptive Analyses

The sample for all of our analyses includes individuals who were respondents in the first wave of the 1990, 1991, 1992, or 1993 SIPP interview. All of the individuals in our sample provided "core" information on their activities in January of each panel year.[73] We create four cross-sectional samples for individuals in January 1990, January 1991, January 1992, and January 1993.

The matched SSA records are used to identify SSI applicants and recipients in each panel. We identify SSI applicants based on date of first application. We only use information from individuals whose master file type was "disabled individual," disabled spouse," or "disabled child." Information regarding "ineligible spouses, fathers, mothers, and/or essential persons" is also included in the file for deeming purposes.[74] Because individuals in the "ineligible" group are not applying for benefits, we do not count them as applicants. In a small number of cases where the application date is missing, we use the record establishment date as the date of first application.

We identify SSI recipients based on monthly payment status. If the monthly payment status variable indicates that the individual was in "current pay" status for that month, we include them as an SSI recipient. SSA declares an individual who meets all the medical and non-medical criteria of the SSI program as being in "current pay" status for that program. SSA retroactively recoded pay status variables as if they were receiving benefits when they were determined SSI eligible. For example, if SSA determined that an individual qualified for SSI for benefits in January 1991, but the individual did not start receiving benefits until December 1991, the current payment status variable will be coded as if the person was receiving payments starting in January 1991. For SSI recipients, we also report program statistics on Federal SSI amounts and State SSI supplements.[75]

In the remainder of this report, the only variables we use from the matched SSA files are date of SSI application, SSI payment status, and SSI payments. The self-reported data from the SIPP are used to identify the remaining demographic, income, health, and non-SSA program (e.g., AFDC and Food Stamps) variables. Some variables in our analysis are only available for those who

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[73] Because each rotation group within each panel is interviewed separately about their activity over the previous four-month period, the only month in which all individuals in the first wave provide information is January.

[74] The majority of "ineligible" persons on the SSA files were parents of child SSI applicants.

[75] All SSI recipients in "current pay" status received some income from Federal and/or State SSI payments. The impairment codes were missing for the majority of adult (age 18 to 40) SSI recipients and a large portion of child (age 0 to 17) SSI recipients.

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complete interviews at later dates (e.g., topical module information on disability measures). Hence, people who leave the panel through attrition or death will have missing information for these variables. We create separate categories to identify individuals with missing information.

III. CHARACTERISTICS OF SSI AND AFDC RECIPIENTS, 1990 - 1993

A. Overview

In this section we present descriptive statistics for SIPP respondents who were identified as either SSI recipients or AFDC recipients in January of the year in which they were first interviewed. SSI status is based on administrative records and AFDC status is based on self-reports.[76] As mentioned in the introduction, we present many statistics that are of general interest, but focus the discussion on the information that is of direct relevance to the objectives of this project.

All of the statistics presented in this section are based on the combined panels, and are means of annual population estimates obtained from the four separate panels.[77] Individual year estimates are presented in *Appendix E*, were computed using SIPP sample weights and, to the best of our knowledge, represent unbiased estimates of the characteristics of the populations in these program groups in the respective years. The means reported here can be viewed as unbiased estimates of the simple means of the population characteristics over the four-year period. We report a few statistically significant changes in the characteristics over the four-year period in the text.

We discuss the statistics for adults (age 18–64) first. The lengthy exhibit for adult characteristics immediately follows this discussion. (We then discuss the statistics for children, which is followed by the exhibit for children.)

B. Adults

We present descriptive statistics for five adult groups (*Exhibit 5.3*):

- Young female SSI recipients (age 18 to 40);

- Young male SSI recipients (age 18 to 40);

- Older female SSI recipients (age 41 to 64);

- Older male SSI recipients (age 41 to 64); and

- Young female AFDC recipients (age 18 to 40).

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[76] Any person in a family unit that receives an AFDC payment is considered an AFDC recipient unless he or she is an SSI recipient. The SIPP does not clearly identify the "family unit" that coincides with the AFDC program definition.

[77] We used the SIPP weights for the first wave in producing the estimates for each year. The four-year means reported are the same means we would get by pooling the data and using the same weights divided by four.

We only generate statistics for young female AFDC recipients because the vast majority of adult AFDC recipients are young women. While we provide a summary of the characteristics for each of the SSI groups, we focus on young women because it is clear from the statistics that the intersection between the populations served by SSI and AFDC is far more significant for this group than for others. We begin by comparing the characteristics of the four SSI recipient groups, focusing on the differences between the characteristics of the young women and those of the other groups. This includes an examination of past AFDC participation and current participation of other family members. We then compare young female SSI recipients to their counterparts who are receiving AFDC, focusing on the extent to which the latter are potential SSI applicants or recipients. The comparison also examines the AFDC recipients' SSI application and participation histories.

1.   *SSI Recipient Characteristics*

Statistics for adult SSI recipient groups appear in the first four columns of ***Exhibit 5.3***. We find that young female SSI recipients had several characteristics that were similar to those of other adult SSI recipients. First, not surprisingly, approximately 80 percent reported some type of disability and just over 70 percent reported a severe disability.[78] The majority of recipient groups lived with at least one other adult in the family or household, and few had any personal earnings. Further, at least 57 percent of adult SSI recipients in each group lived in families whose monthly incomes were below 150 percent of the poverty line, though young men and women were less likely to be living below the poverty line than their older counterparts.[79] This difference across age groups may be partially explained by the fact that young female SSI recipients were more likely to be living in a family with another adult than were older recipients. We find very similar distributions for personal income across all age groups. Over 60 percent of recipients in each groups had less than $500 in monthly personal income, and over 90 percent in each group had personal incomes less than $1,000.

Three characteristics clearly distinguish young female SSI recipients from other adult SSI recipients. First, they are 2.5 times more likely to have a child of their own living with them than any other group of adult SSI recipients (35.7 percent vs. 9.4, 8.5, and 13.6 percent for young men, older women, and older men, respectively). Second, they are two times more likely than any other group to be a past or present AFDC recipient (24.6 percent were past AFDC participants vs. 4.5, 10.1, and 5.0 percent for young men, older women, and older men, respectively).[80] The large difference in past AFDC participation for younger and older women may reflect more frequent transitions of young women from AFDC to SSI in recent years or a decline with age in the percent of female applicants who are former AFDC recipients. Third, young female recipients were much more likely than others to live in a family that received an

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[78]The measures of disability we use include individuals who: reported a limitation in kind or amount of work or housework he or she can do; has difficulty with any of the functional activities or activity of daily living; uses a wheelchair; has used a cane, crutches, or walker for more than six months; or has a disabling mental or emotional condition. We count a person as having a severe disability if they used a wheelchair, used a cane, crutches or walker for more than six months, are unable to do a functional activity, need assistance with an ADL, report being prevented from doing work or housework, or have mental retardation, Alzheimer's, senility, dementia, or a developmental disability such as autism or cerebral palsy.

[79] This result does not change appreciably when annual income is used.

[80] The percentages are actually slightly higher because our sample includes some cases with missing values.

AFDC payment in the same month (20.6 percent vs. 4.3, 7.4 and 4.4 percent for young men, older women, and older men, respectively).

2.   *Comparison of SSI and AFDC Recipients*

To assess the number of adult AFDC recipients who could potentially qualify for SSI, we compare characteristics of young female AFDC recipients (fifth column of *Exhibit 5.3*) to those of young female SSI recipients (first column). The two most obvious characteristics to compare are disability and income status.[81] We find that over 20 percent of AFDC recipients had a disability (over 15 percent reported a severe disability) and approximately 80 percent of AFDC recipients lived in a family whose income was below the federal poverty line (*Exhibit 5.3*, column 5). Hence, it is possible that a significant portion of AFDC recipients in the 1990 to 1993 cohort could have satisfied the SSI eligibility requirements based on their reported disability, health, and income characteristics. The percent with disabilities may understate the potential number of people who might be eligible for SSI, or at least apply, because some may have failed to identify their disability. Note that only 80 percent of young female SSI recipients reported a disability or health problem of any kind, even though all of these recipients presumably had one. Identifying potential SSI recipients from SIPP is, unfortunately, very problematic because the health and income information in SIPP is very incomplete relative to the information necessary to assess medical eligibility for SSI.

One major difference between the AFDC and SSI recipients is that SSI recipients were more likely to be living in a family with another adult (72.1 vs. 48.3 percent). This difference, along with the fact that SSI benefits are more generous than AFDC benefits, explains why SSI recipients were more likely than AFDC recipients to be living in a family above poverty (63.9 percent vs. 19.7 percent).[82]

3.   *Transitions from AFDC to SSI*

A key feature of the matched data for this project is that they allow us to follow the SSI application and recipient histories of the AFDC recipient group over the years before and after SIPP. We find that 9.2 percent of all AFDC recipients in the young female sample filed a first SSI application in the period since 1990, with the largest number applying in the 1992 to 1993 period. Another 5.7 percent had filed a first application for SSI prior to 1990. Not surprisingly, the percent actually receiving an SSI benefit in each two-year period also increased substantially after 1990. From 1988-89 to 1996-97, the percent who received a payment in the two-year period more than tripled, from 2.3 to 7.5 percent. The trends from the pooled data understate the extent of the transitions since 1990 for those who were in the 1990 AFDC caseload because the

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[81] A cleaner estimate of potential SSI recipients could be derived by selecting samples of AFDC recipients who had a disability and income below certain thresholds.

[82] The percents are based on January incomes. SSI benefits are more generous both because the maximum SSI benefit is generally higher than the corresponding benefit for an AFDC family member, and because the deeming rules for income of other family members are less restrictive.

Exhibit 5.3
Mean Characteristics of 1990-1993 Adult SSI and AFDC Recipients[83]

CHARACTERISTICS	Age 18 to 40		Age 41 to 64		18 to 40
	SSI Women	SSI Men	SSI Women	SSI Men	AFDC Women
Total					
Mean Annual Sample Size	88	91	154	79	588
Population Size Estimate	470.3	552.3	748.3	453.5	2940.3
Attrition[84]					
% not completing 1 year of SIPP	13.6	19.6	9.1	11.4	16.4
% not completing full SIPP panel	23.1	31.0	15.3	20.9	33.4
Age					
18-24	24.3	27.0	NA	NA	32.9
25-29	21.6	24.8	NA	NA	25.2
30-34	25.5	26.2	NA	NA	24.6
35-40	28.5	22.0	NA	NA	17.4
41-46	NA	NA	21.3	26.1	NA
47-52	NA	NA	18.9	21.1	NA
53-59	NA	NA	33.9	30.9	NA
60-64	NA	NA	25.8	21.9	NA
Marital Status					
Married	13.3	12.0	18.6	35.2	15.7
Never Married	62.8	80.2	19.8	35.3	49.5
Divorced/Separated/Widowed	23.9	7.8	61.5	29.7	34.7
Race/Ethnicity					
Hispanic	8.8	13.3	12.7	14.9	18.8
Black (excluding Hispanic)	28.9	26.3	28.0	35.0	35.9
White	59.9	56.9	56.0	44.9	41.1
Other	2.6	3.5	3.3	5.2	4.2
Education Attained[85]					
0-11 years	48.1	50.1	65.9	69.8	46.0
12 years	38.1	37.1	23.2	20.5	38.3
13-15 years	11.1	10.3	7.9	6.6	14.3
16 or more years	2.7	2.6	3.1	3.2	1.4
Household Size[86]					
1 person	10.7	15.2	35.6	27.9	0.1
2 persons	24.8	16.7	29.4	32.2	14.7
3-4 persons	43.5	45.5	22.8	26.1	50.3
5 persons or more	20.9	22.6	12.1	13.9	35.0

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[83] Includes individuals who were interviewed in first wave of the 1990, 1991, 1992, or 1993 SIPP panels. An SSI recipient is defined as an individual who is "in payment status"—i.e., SSA records show that this person was scheduled to receive a payment. Our SSI sample includes individuals who were recipients according to SSA records in January of the calendar year. Our AFDC sample includes individuals who lived in families that received an AFDC payment during January of that year. First wave weights were used to produce population mean estimates for each year. Values reported are unweighted means of the annual estimates.

[84] Excludes individuals who died during the panel period.

[85] Includes the number of education years completed. Persons who receive a high school equivalency are included in the 12 years category.

[86] Based on household size at first interview.

Exhibit 5.3 (continued)
Mean Characteristics of 1990-1993 Adult SSI and AFDC Recipients[87]

CHARACTERISTICS	Age 18 to 40		Age 41 to 64		18 to 40
	SSI Women	SSI Men	SSI Women	SSI Men	AFDC Women
Family Size[88]					
1 person	16.9	21.7	38.8	35.7	0.8
2 persons	24.1	15.1	29.3	28.7	16.4
3-4 persons	39.3	43.9	20.5	22.1	50.2
5 persons or more	19.8	19.2	11.4	13.7	32.7
Children and Adults in the Household and Family[89]					
% w/at least one child in household	49.8	33.4	23.3	26.1	99.2
% w/at least one child in the family	48.0	31.0	22.8	24.3	98.6
% w/at least one adult in the household (other than the respondent)	72.1	84.6	58.3	70.8	48.3
% w/at least one adult in the family (other than the respondent)	64.1	78.0	54.6	62.9	42.1
Own Children[90]					
Percent with Own Children	35.7	9.4	8.5	13.6	96.9
Age of Youngest Child					
• None	64.3	90.6	91.5	86.4	3.1
• 0-2	9.5	3.8	0.3	0.6	46.8
• 3-5	6.7	1.7	0.6	1.3	23.1
• 6-12	12.8	3.3	2.9	5.0	22.4
• 13-17	6.8	0.7	4.7	6.8	4.6
Monthly Family Income for January (in 1993 dollars)[91]					
Less than $500	19.5	17.8	34.8	26.3	37.7
$500-$999	32.9	24.6	33.2	37.6	36.5
$1,000-$1,499	15.5	14.7	13.3	17.9	9.9
$1,500-$1,999	11.0	9.6	6.9	5.2	4.5
$2,000 or more	21.2	33.1	11.8	13.0	11.4
Mean	$1,551	$1,926	$1,096	$1,139	$1,013
Family Income as % of Poverty for January[92]					
Less than 1.00	46.1	35.6	60.2	49.8	80.3
1.00-1.49	23.4	21.7	20.0	29.1	8.8
1.50-2.00	8.7	11.8	8.5	9.9	4.3
2.00-2.99	10.2	15.5	6.8	7.3	3.9
3.00 or more	11.6	15.5	4.3	3.9	2.7

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[87] Includes individuals who were interviewed in first wave of the 1990, 1991, 1992, or 1993 SIPP panels. An SSI recipient is defined as an individual who is "in payment status"—i.e., SSA records show that this person was scheduled to receive a payment. Our SSI sample includes individuals who were recipients according to SSA records in January of the calendar year. Our AFDC sample includes individuals who lived in families that received an AFDC payment during January of that year

[88] The Census defines a "family" as a group of two or more persons (one of who is the "householder") related by birth, marriage, or adoption and residing together; all such persons (including related subfamily members) are considered members of one family.

[89] Children include individuals under age 18.

[90] Includes only those with children under 18 who are living in the family at the time of the SIPP interview.

[91] Based on monthly income for January. Income is adjusted using the Consumer Price Index.

[92] Based on monthly income for January. Income is adjusted using the Consumer Price Index.

Exhibit 5.3 (continued)
Mean Characteristics of 1990-1993 Adult SSI and AFDC Recipients[93]

	Age 18 to 40		Age 41 to 64		18 to 40
CHARACTERISTICS	**SSI Women**	**SSI Men**	**SSI Women**	**SSI Men**	**AFDC Women**
Monthly Personal Income for January (in 1993 dollars)[94]					
Less than $500	60.6	66.5	66.9	65.3	56.8
$500-$999	33.2	27.1	29.2	29.4	37.1
$1,000-$1,499	4.7	4.4	2.8	2.8	4.9
$1,500-$1,999	1.4	1.1	0.4	1.4	0.6
$2,000 or more	0.0	1.0	0.7	1.3	0.6
Mean	$495	$502	$496	$543	$504
January Labor Earnings					
% with own labor earnings	7.5	16.6	3.4	4.7	10.1
% living in a family with earnings[95]	36.2	45.9	21.7	24.0	26.1
Household Assets (in 1993 dollars)[96]					
Missing	12.2	18.9	10.5	19.0	14.1
$0-$1,999	43.3	35.3	47.4	38.4	59.4
$2,000-$9,999	12.8	10.4	11.0	10.6	13.6
$10,000-$24,999	6.7	8.7	9.5	8.9	5.0
$25,000 or more	25.0	26.8	21.4	23.1	7.9
Mean	$37,233	$38,806	$25,240	$29,171	$10,008
Program Participation[97]					
AFDC	20.6	4.3	7.4	4.4	100.0
SSI	100.0	100.0	100.0	100.0	3.3
Food Stamps	41.2	29.3	50.4	40.5	91.1
Past Program Participation of Family[98]					
Missing	3.0	4.6	3.0	4.4	2.9
Past AFDC Recipient	24.6	4.5	10.1	5.0	100.0
Past Food Stamps Recipient	47.2	29.6	57.5	43.6	93.1

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[93] Includes individuals who were interviewed in first wave of the 1990, 1991, 1992, or 1993 SIPP panels. An SSI recipient is defined as an individual who is "in payment status"—i.e., SSA records show that this person was scheduled to receive a payment. Our SSI sample includes individuals who were recipients according to SSA records in January of the calendar year. Our AFDC sample includes individuals who lived in families that received an AFDC payment during January of that year

[94] Based on monthly income for January.

[95] Includes earnings from the SSI or AFDC recipient.

[96] Total household asset values include home equity, net vehicle equity, business equity, interest earning assets held at banks or other institutions, stock and mutual fund shares, real estate, other assets, and IRA accounts. Assets are adjusted using the Consumer Price Index. There are some missing values for assets because of the timing of the questions. The asset information in each SIPP panel is gathered at different points following the first interview.

[97] AFDC and Food Stamp participation is based on family-level participation. SSI participation is based on individual-level participation.

[98] Individual received benefit in some period prior to January of year indicated.

Exhibit 5.3 (continued)
Mean Characteristics of 1990-1993 Adult SSI and AFDC Recipients

CHARACTERISTICS	Age 18 to 40		Age 41 to 64		18 to 40
	SSI Women	SSI Men	SSI Women	SSI Men	AFDC Women
SSI Recipiency In Other Years[99]					
Never a Recipient	0.0	0.0	0.0	0.0	91.7
Pre-1984	39.9	37.0	37.4	40.6	0.9
1984-1985	48.7	46.9	47.6	45.1	1.1
1986-1987	59.4	58.4	61.9	54.7	1.6
1988-1989	73.7	72.5	78.6	71.2	2.3
1990-1991	93.9	94.1	95.3	93.7	3.6
1992-1993	98.3	96.0	96.7	94.4	5.2
1994-1995	93.0	90.0	87.9	80.7	6.6
1996-1997	87.1	82.3	81.1	68.3	7.5
Year of First SSI Application					
Never Applied	0.0	0.0	0.0	0.0	85.3
Pre-1984	52.1	49.7	61.8	59.6	2.7
1984-1985	10.5	9.8	8.2	8.2	0.9
1986-1987	11.3	12.2	10.9	7.6	0.9
1988-1989	10.4	12.9	9.6	8.4	1.2
1990-1991	11.7	11.4	7.8	12.2	2.0
1992-1993	3.9	4.1	1.8	4.1	2.9
1994-1995	NA	NA	NA	NA	2.3
1996-1997	NA	NA	NA	NA	2.0
One Period Disability Status[100]					
Missing	14.0	14.4	10.0	13.1	15.4
No Disability	6.1	6.5	3.1	2.9	64.5
Any Disability[101]	80.0	79.0	87.2	84.2	20.2
• Severe Disability[102]	72.9	70.9	83.2	80.0	15.0
Functional Limitation, ADL, and IADL Status[103]					
Missing	14.0	14.4	10.0	13.1	15.4
• None	26.6	32.4	17.2	21.7	71.9
• Any[104]	59.4	53.1	73.3	65.4	12.8
• Any Severe[105]	52.3	49.3	62.6	55.5	10.6
• Multiple[106]	46.0	43.2	67.0	54.3	8.0

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[99] Includes individuals who were SSI recipients in at least one month during the two-year period.

[100] Based on definition of disability used by McNeil (1993) and Kruse (1997).

[101] Reports: a limitation in kind or amount of work or housework he or she can do; has difficulty with any of the functional activities or ADLs; uses a wheelchair; has used a cane, crutches, or walker for more than six months; or has a disabling mental or emotional condition.

[102] Includes those who use a wheelchair, used a cane, crutches or walker for more than six months, are unable to do a functional activity, need assistance with an ADL, report being prevented from doing work or housework, or have mental retardation, Alzheimer's, senility, dementia, or a developmental disability such as autism or cerebral palsy.

[103] Based on definition of disability used by Hu, Lahiri, Vaughan, and Wixon (1997).

[104] Functional Limitations, ADLs, and IADL include the following categories: getting around the home, sitting in chair, showering, dressing, eating, using the toilet, getting out side the home, handling money and bills, preparing a meal, doing light housework, using the telephone, lifting ten pounds, walking stairs, walking 0.25 miles, and walking.

[105] A severe Functional Limitation, ADL, or IADL means that the respondent either required personal assistance or was unable to perform a certain task.

[106] Includes those who report difficulties with at least two functional limitations, ADLs, or IADLs.

1991, 1992 and 1993 SIPP samples of AFDC cases exclude those who transitioned from AFDC to SSI between 1990 and the relevant interview data for the later panel.[107] These trends show that a substantial number of transitions from AFDC to SSI occurred during this pre-reform period, but do not tell us whether earlier cohorts of AFDC recipients transitioned to SSI at a different rate.

The number of young female AFDC recipients transiting to SSI is even more impressive when viewed relative to the size of the number of young women in the SSI caseload. The 9.2 percent of the AFDC cases represented by the pooled sample that applied for SSI between 1990 and 1997 represent 57.5 percent of our estimate of the mean number of female SSI recipients in the age groups in 1990-1993. The 7.5 percent of the same group that were SSI recipients in 1996-1997 is equivalent to 46.9 percent of the mean estimate for young female SSI recipients in 1990. Again, these figures understate the extent of the transitions because of the way the sample are defined.[108]

An increase in transitions over this period is evident from changes in the characteristics of SSI recipients over the four SIPP samples (*Appendix Exhibits E.1 – E.4*). As with other groups of SSI recipients, the total number of young female SSI recipients grew substantially from 1990 to 1993 (from 290 to 555 thousand). The characteristics of young female SSI recipients changed from 1990 to 1993 in three related ways. In comparison to those in 1990, 1993 recipients were more likely to be married (20.4 vs. 10.2 percent), have a child (37.6 vs. 23.7 percent) and be from an AFDC family (23.4 vs. 14.6 percent). As discussed in the previous chapter, these changes may reflect a number of factors that have increased SSI applications and allowances, including: administrative changes in SSI that have made it easier to obtain eligibility for some impairments; spillover effects of Zebley; outreach efforts by SSA states and advocacy groups; and loss of own earnings or earnings of a spouse due to the recession (see the previous chapter). We have not found evidence that this trend is partly due to AFDC reforms, but neither can we rule it out.

C. Children

Our analysis for children is similar to that for adults. We first discuss descriptive statistics for SSI children, then compare their characteristics to those of AFDC children, and finally examine transitions from AFDC to SSI. Characteristics are presented in *Exhibit 5.4*, which appears at the end of this section. We identify child SSI and AFDC recipients in the same manner as for adults.

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[107] Statistics for AFDC recipients in just the 1990 SIPP appear in *Appendix Exhibit E.5.* Of these, 10.4 percent filed a first SSI application from 1990 to 1997, including 3.7 percent in 1992-1993. The percent receiving a payment from 1988-1989 to 1996-1997 more than quadrupled.

[108] If we use the data for the 1990 SIPP panel, alone, we find that the number of first applications from 1990 to 1997 for young women who were AFDC recipients in 1990 is estimated to be equal to 92.0 percent of the young female SSI caseload in 1990. The number who were recipients in 1996-1997 is 66.4 percent of the 1990 SSI caseload for young women.

Exhibit 5.4
Mean Characteristics of 1990-1993 Child SSI and AFDC Recipients[109]

	Age 0 to 17	
CHARACTERISTICS	**SSI Children**	**AFDC Children**
Total		
Mean Sample Size	176	1,486
Mean Population Size Estimate (x1,000)	442.8	6,905
Attrition[110]		
% not completing one year of SIPP	11.0	15.0
% not completing full SIPP panel	26.7	32.1
Sex		
Male	65.2	50.5
Female	35.8	49.5
Age		
0-2	6.1	23.6
3-5	14.0	21.0
6-12	45.0	37.9
13-17	34.8	17.5
Race/Ethnicity		
Hispanic	16.1	22.2
Black (excluding Hispanic)	45.4	37.1
White	36.1	34.5
Other	2.3	6.2
Household Size[111]		
1 person	0.0	0.0
2 persons	8.3	7.1
3-4 persons	45.7	44.5
5 persons or more	46.1	48.3
Family Size[112]		
1 person	2.0	0.1
2 persons	9.9	8.1
3-4 persons	44.2	45.7
5 persons or more	43.9	46.1
Children and Adults in Household and Family[113]		
% w/at least one other child in household	82.3	87.3
% w/at least one other child in family	81.1	87.2

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[109] Includes children whose families were interviewed in first wave of the 1990, 1991, 1992, or 1993 SIPP panels. An SSI recipient is defined as an individual who is "in payment status"—i.e., SSA records show that this person was scheduled to receive a payment. Our SSI sample includes individuals who were recipients according to SSA records in January of the calendar year. Our AFDC sample includes individuals who lived in families that received an AFDC payment during January of that year. First wave weights were used to produce population mean estimates for each year. Values reported are unweighted means of the annual estimates.

[110] Excludes individuals who died during the panel period.

[111] Based on household size at first interview.

[112] The Census defines a "family" as a group of two or more persons (one of who is the "householder") related by birth, marriage, or adoption and residing together; all such persons (including related subfamily members) are considered members of one family.

[113] Children include individuals under age 18.

Exhibit 5.4 (continued)
Mean Characteristics of 1990-1993 Child SSI and AFDC Recipients

CHARACTERISTICS	Age 0 to 17	
	SSI Children	AFDC Children
Parents in the Family[114]		
Mother-only	52.2	79.9
Father-only	1.6	1.9
Both parents present	41.1	17.8
Missing parent or no parent present	5.1	0.7
Monthly Family Income for January (in 1993 dollars)[115]		
Less than $500	15.6	33.5
$500-$999	26.5	39.6
$1,000-$1,499	22.8	12.0
$1,500-$1,999	11.5	4.8
$2,000 or more	23.5	9.9
Mean	$1,393	$965
Family Income % of Poverty for January[116]		
Less than 1.00	55.7	82.8
1.00-1.49	20.0	9.0
1.50-2.00	8.8	3.9
2.00-2.99	11.9	2.6
3.00 or more	3.6	1.6
Household Assets (in 1993 dollars)[117]		
Missing	11.4	14.2
$0-$1,999	43.5	60.3
$2,000-$9,999	18.0	12.7
$10,000-$24,999	10.8	4.7
$25,000 or more	16.3	8.0
Mean	$19,835	$9,286
Program Participation		
SSI	100.0	1.9
AFDC[118]	29.4	100.0
Food Stamps	46.8	91.6

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[114] A small number of children in the SIPP do not have a "parent" present because they either live on their own or there is no parent present.

[115] Based on monthly income for January. Income is adjusted using the Consumer Price Index.

[116] Based on monthly income for January.

[117] Total household asset values include home equity, net vehicle equity, business equity, interest earning assets held at banks or other institutions, stock and mutual fund shares, real estate, other assets, and IRA accounts. Assets are adjusted using the Consumer Price Index. There are some missing values for assets because of the timing of the questions. The asset information in each SIPP panel is gathered at different points following the first interview.

[118] One or more family members received benefits in January of year indicated.

Exhibit 5.4 (continued)
Mean Characteristics of 1990-1993 Child SSI and AFDC Recipients

	Age 0 to 17	
CHARACTERISTICS	**SSI Children**	**AFDC Children**
SSI Recipiency In Other Years[119]		
Never a Recipient	0.0	94.6
Pre-1984	14.3	0.1
1984-1985	23.5	0.3
1986-1987	34.8	0.4
1988-1989	59.5	1.0
1990-1991	89.5	2.1
1992-1993	99.4	4.0
1994-1995	95.1	5.0
1996-1997	91.2	5.1
Year of First SSI Application		
Never Applied	0.0	89.4
Pre-1984	17.3	0.2
1984-1985	13.1	0.4
1986-1987	16.2	0.5
1988-1989	17.2	0.5
1990-1991	26.2	1.4
1992-1993	9.9	3.3
1994-1995	NA	2.9
1996-1997	NA	1.4
One Period Disability Status[120]		
Missing	14.3	16.3
No Disability	29.6	78.7
Any Disability	56.0	5.0

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[119] Includes individuals who were SSI recipients in at least one month during the two-year period.

[120] There are two definitions of disabilities used based on the age of the child. For those under age six, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the usual kind of activities by most children their age. For those age six and over, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the ability to do regular school work.

1.   *Child SSI Recipients*

A large majority of child SSI recipients in this four-year period were male (65.2 percent), over the age of six (79.8 percent), lived in families with other children (81.1 percent), and lived in families whose monthly income was 150 percent of poverty or less (75.7 percent). Just over half lived only with their mother (52.2 percent).

Findings from the National Longitudinal Transition Study of Special Education Students, conducted from 1987 to 1990, may provide part of the explanation for high transition rates among young female AFDC recipients. Wagner, *et. al*., (1993) reported that 41 percent of young women with disabilities became mothers within five years of leaving school, compared to 28 percent for other young women. Only 16 percent of young men with disabilities became fathers over the same period. For women, the highest parenting rates were among those with learning disabilities (50 percent), serious emotional disturbances (48 percent), or are hearing impaired (48 percent). We do not know, however, whether these are higher figures than in earlier years, or whether the share of these women who transitioned to SSI increased. One untested hypothesis is that the share of such women who became child SSI recipients increased because of *Zebley* and changes to the child listing for mental impairments, but this would not explain the transitions among those who were 18 or over and receiving AFDC when we observed them in SIPP. Changes in the consideration of symptoms, source evidence, and drug and alcohol abuse in the disability determination process might have contributed, but this is difficult to test.

The SIPP respondent in the child's household reported that the child had a disability in just 56 percent of cases, and the information was missing in 14.3 percent of cases.[121]   We assume that almost all SSI children had some form of disability, and that the 29.6 percent reported to have no disability reflects very significant under-reporting of child disability in SIPP.

In the absence of the SSI program, many of these children would likely be eligible for AFDC. Like AFDC children, the SSI children live predominately in low-income, mother-only families. In fact, a substantial portion of the child SSI recipients during this period already lived in an AFDC family (29.4 percent). This is a reasonable lower bound for the share of SSI children who would be AFDC eligible if they were not receiving support from SSI.

2.   *Comparison of AFDC Children to SSI Children*

As with adults, we compare disability and income characteristics of AFDC and SSI children to assess the potential SSI eligibility of AFDC children. Approximately five percent of AFDC children had some type of disability.[122] While this percentage is relatively small, it represents 345 thousand AFDC children with a disability – compared to a child SSI caseload estimated at 443 thousand children.[123] Further, given the undercount for child disability that is evident for SSI

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[121] There are two definitions of disabilities used based on the age of the child. For those under age six, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the usual kind of activities by most children their age. For those age six and over, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the ability to do regular school work. The actual percentage of children reporting a disability is larger than 56 percent because 14.3 percent of the cases had missing values.

[122] This percentage was slightly higher because it includes 16.3 percent of cases with missing values.

[123] This number is 5.0 percent of 6.9 million AFDC children.

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children, the number of AFDC children with some disability was probably much larger. The severity of disability among AFDC children with disabilities is probably much lower than among SSI children, and would likely not meet SSI medical criteria in a very large share of cases. Unfortunately, the very limited information in SIPP about child disability does not permit a meaningful assessment of severity. Virtually all AFDC children would probably meet non-medical SSI eligibility criteria because the SSI means test is less stringent; AFDC children were more likely than SSI children to live in a family that had family income below 150 percent of poverty (91.8 vs. 75.7 percent).

3. Transitions from AFDC to SSI

As with young female AFDC recipients, we find a gradual increase in the percent of child AFDC recipients who became SSI recipients. We find that 9.2 percent of the child AFDC recipients represented by the pooled sample applied for SSI between 1990 and 1997. The percent of child AFDC recipients who received SSI in a two-year period increased from 1.0 percent in 1988-89 to 5.1 percent in 1996-97.[124] The largest increase (1.9 percentage points) occurred from 1990-91 to 1992-93, following *Zebley*. First applications in 1992-93 were substantially higher (3.3 percent). As with adult women, this understates the extent of the transitions because of the way the sample is constructed.[125]

The numbers represented by these small percentages of AFDC cases are very large relative to the size of the SSI child caseload. The estimated number of first applications filed since 1990 is 146.7 percent of the estimated mean child SSI caseload from 1990 to 1993, and the estimated number receiving benefits in 1996-1997 is 79.5 percent of the same figure.[126]

The increase in transitions had a substantial effect on characteristics of child SSI recipients from 1990 to 1993.[127] The number of child SSI recipients grew over this period from 349 to 555 thousand. In comparison to the 1990 SSI child recipients, the 1993 SSI child recipients were more likely to be male (69.3 vs. 59.8 percent), white (42.9 vs. 23.4 percent), and live with another child in the family (83.5 vs. 67.0) (see ***Appendix Exhibit E.6***).

In the next section, we will examine the characteristics of those children who applied for SSI during this period, as well as of those who were awarded payments.[128]

IV. CHARACTERISTICS OF POST-SIPP SSI APPLICANTS AND RECIPIENTS

We created samples of post-SIPP SSI applicants and recipients to examine the characteristics of individuals who became SSI applicants and recipients during the pre-reform period. For adults,

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[124] This growth pattern is consistent across AFDC recipients in each SIPP panel.

[125] If we consider just the 1990 SIPP sample for AFDC children (***Appendix Exhibit E.7***), the percent who filed their first application between 1990 and 1997 is 9.4 percent, and the percent who received SSI in a two-year period increased from 1.8 in 1988-1989 to 6.5 in 1996-1997.

[126] If we just use the 1990 SIPP child sample (***Appendix Exhibit E.7***), the number who file first applications between 1990 and 1997 is estimated to be 155.3 percent of the 1990 SSI child caseload and the number receiving benefits in 1996-1997 is 107.4 percent of the same figure.

[127] For a detailed discussion of the legislative changes for SSI children, see Lewin (1998).

[128] See Garrett and Glied (1997) and Kubik (1998). Discussion of these articles appears in this project's background report (Lewin, 1998b).

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we present statistics for the four age-sex groups. We also compare the characteristics of post-SIPP SSI recipients to "existing recipients" -- those who were SSI recipients at the start of the SIPP interviews, examined earlier -- to determine the extent to which the post-SIPP recipients "looked like" the existing recipients at the initial interview, apart from participating in SSI.

To generate large enough samples of specific demographic groups of SSI applicants, we pooled data from the 1990 through 1993 SIPP panels. Individual panel samples were too small to produce reliable estimates. We only include individuals who became new applicants or recipients in the five years following their first SIPP interview. The post-SIPP samples include those who became a new SSI applicant and/or recipient between: February 1990 and January 1995 in the 1990 SIPP; February 1991 and January 1996 in the 1991 SIPP; February 1992 and January 1997 in the 1992 SIPP; and February 1993 and January 1998 in the 1993 SIPP. The applicant samples in each demographic group are substantial (e.g., 562 for young women and 1,127 for children). Those who receive benefits are smaller in number, but still sufficiently numerous for meaningful analysis (e.g., 323 for young women and 528 for children). All the descriptive statistics presented are based on the first SIPP interview. When interpreting them, it is important to keep in mind that some key characteristics may have changed between the SIPP observation data and the SSI application or allowance. The statistics are unweighted means, and thus do not represent population estimates. While we think biases are small, a special sample of the low income population that was included in just the 1990 SIPP may be a source of bias in the unweighted statistics.[129] We present findings for post-SIPP applicants first, then compare findings for post-SIPP recipients.

A. Post-SIPP Applicants

1. Adults

In the first four columns of *Exhibit 5.5*, we present characteristics of adult post-SSI applicants at the time of their first SIPP interview. As before, in earlier discussions of recipients, we focus on young women and make comparisons to the other groups. The characteristics reported are not weighted.

Adult post-SIPP applicants in all four groups were similar in many respects. The majority was white, had 12 years of education or less, and lived in a family with at least one other adult. While at least 60 percent of all adult applicant groups lived in a family with at least one other adult, with the exception of older men, most were not married.[130] Almost 50 percent of individuals in each group lived in families whose monthly income was below 150 percent of

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[129]We were unaware of this feature of the sampling methodology for the 1990 SIPP at the time we produced the statistics. We calculated unweighted means because we were interested in the written sample variation of each variable, in anticipation of the hazard analysis presented later. This information helped us decide which explanatory variables and categories to use in the models. We could have, instead, used SIPP first-wave weights in the same way that we used them for estimating characteristics of SSI and AFDC recipients. The population for each SIPP year would be those in the January population who filed their first SSI application (or received their first allowance) in the next five years.

[130] Just over half of post-SIPP older adult male SSI recipients were white (54.1 percent).

poverty. Young women were slightly more likely to live in a family below the poverty line than those in other groups.

Four characteristics distinguish the young women from those in the other adult groups. First, they were two times more likely to have children than any other group (63.5 vs. 27.2, 23.5, and 26.1 percent for young men, older women, and older men, respectively). Second, they were over three times more likely than any other group to be living in a family that currently received AFDC (26.5 vs. 2.3, 8.2, and 2.2 percent for young men, older women, and older men, respectively). Third, in comparison to older SSI applicants, young women had a much lower incidence of reporting disability (38.4 vs. 51.8 and 49.2 percent for older women and older men, respectively). One reason may be higher prevalence of psychiatric impairments among the younger applicants and high underreporting of such impairments in SIPP. Finally, young adult applicants of both sexes were less likely than older applicants to receive an award; 65.1 percent of the young women and 65.7 percent of the young men did not receive an award, compared to 49.2 and 47.7 percent for older women and older men, respectively.

2.   Children

In the final column of *Exhibit 5.5*, we present characteristics of post-SIPP child SSI applicants. The majority of post-SIPP child SSI applicants were male (65.0 percent), from mother-only families (52.6 percent), lived in a family whose income was below 150 percent of poverty (71.6 percent), lived in a family that received Food Stamps (51.7 percent), and reported no disability (at least 61.4 percent). A large share of these children lived in an AFDC family when first observed in SIPP (39.0 percent), providing more evidence that SSI eligibility changes following *Zebley* shifted children from AFDC to SSI. Finally, 56.8 percent of these applicants did not become an SSI recipient, at least during the five-year period. This denial rate was slightly higher than for older adults, but lower than for young adults.

B. Post-SIPP SSI Recipients

1.   Adults

Characteristics of post-SIPP SSI recipients (i.e., those who first became recipients during the first five years after they were observed in SIPP) are reported in *Appendix Exhibit E.8*. In general, we find that the comparisons of post-SIPP recipient groups are parallel to the comparisons of post-SIPP applicants. Hence, we focus on the differences between post-SIPP applicants and recipients. While we only discuss our findings for young women, we find the same pattern of results for other adult groups.

In comparison to young female applicants, that young female recipients were older (57.3 vs. 49.5 percent were over age 30), had less education (45.2 vs. 39.7 percent did not have a high school diploma), and were more likely to: be living in a family whose income was below 150 percent of poverty (68.4 vs. 61.4 percent); be participating in AFDC (29.4 vs. 26.5 percent) or Food Stamps (48.9 vs. 39.0 percent); and have reported a disability (50.5 vs. 38.4 percent). The figures for AFDC participation imply that such applicants had allowance rates that were slightly above average.

Exhibit 5.5
Characteristics of Post-SIPP SSI Applicants in the 1990 through 1993 SIPP Panels[131]

CHARACTERISTICS	Age 18 to 40		Age 41 to 64		Age 0 to 17
	Women	Men	Women	Men	Children
Total					
Sample Size	562	481	631	445	1,127
Sample Size by Panel	`				
1990	194	160	213	146	294
1991	83	87	127	97	221
1992	145	125	142	105	297
1993	140	109	149	97	315
Sex					
Male	0.0	100.0	0.0	100.0	65.0
Female	100.0	0.0	100.0	0.0	35.0
Age					
0-5	NA	NA	NA	NA	38.2
6-12	NA	NA	NA	NA	37.2
13-17	NA	NA	NA	NA	24.7
18-30	50.5	50.7	NA	NA	NA
31-40	49.5	49.3	NA	NA	NA
41-50	NA	NA	47.5	46.3	NA
51-60	NA	NA	39.5	41.8	NA
61-64	NA	NA	13.0	11.9	NA
Marital Status					
Married	33.8	30.1	42.8	56.0	NA
Never Married	37.9	50.5	10.9	13.0	NA
Divorced/Separated/Widowed	28.3	19.3	46.2	29.0	NA
Race/Ethnicity					
Hispanic	13.0	14.6	20.1	15.3	15.5
Black (excl. Hispanic)	25.1	20.6	19.8	17.8	37.5
White	57.5	61.5	53.9	61.6	44.5
Other	4.4	3.3	6.2	5.4	2.5
Education Attained[132]					
0-11 years	39.7	38.3	49.9	51.2	NA
12 years	36.8	41.6	33.3	32.8	NA
13-15 years	19.0	15.6	12.4	10.6	NA
16 or more years	4.4	4.6	4.4	5.4	NA
Household Size[133]					
1 person	6.4	13.1	17.6	21.3	0.2
2 persons	22.1	20.2	34.7	30.8	5.3
3-4 persons	46.1	43.9	31.7	31.7	51.6
5 persons or more	25.4	22.9	16.0	16.2	42.9

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[131] Includes individuals who became SSI applicants five years after their first SIPP interview in the 1990, 1991, 1992, or 1993 SIPP Panel. Based on application records from the matched SSA files.

[132] Includes the number of education years completed. Persons who receive a high school equivalency are included in the 12 years category.

[133] Based on household size at first interview.

Exhibit 5.5 (Continued)
Characteristics of Post-SIPP SSI Applicants in the 1990 through 1993 SIPP Panels[134]

| CHARACTERISTICS | Age 18 to 40 | | Age 41 to 64 | | Age 0 to 17 |
	Women	Men	Women	Men	Children
Family Size[135]					
1 person	13.5	26.2	22.0	31.7	0.9
2 persons	19.2	14.8	32.0	25.4	6.7
3-4 persons	44.1	39.5	30.9	28.1	51.4
5 persons or more	23.1	19.5	15.1	14.8	41.0
Parents in the Family[136]					
Mother-only	NA	NA	NA	NA	52.6
Father-only	NA	NA	NA	NA	3.0
Both parents	NA	NA	NA	NA	44.2
Missing parent or no parent	NA	NA	NA	NA	0.2
Children and Adults in the Household and Family[137]					
% w/at least one child in household	72.1	47.8	36.8	33.0	NA
% w/at least one adult in household (other than the recipient)	69.4	85.9	73.1	77.3	NA
% w/at least one child in the family	69.9	43.0	36.0	31.5	NA
% w/at least one adult in family (other than recipient)	60.0	72.1	68.1	66.3	NA
Own Children[138]					
Percent with Own Children	63.5	27.2	23.5	26.1	NA
Age of Youngest Child					
• None	8.9	5.8	76.5	73.9	NA
• 0-2	20.6	10.6	0.8	2.2	NA
• 3-5	12.9	4.6	1.9	1.6	NA
• 6-12	20.0	8.9	5.4	11.0	NA
• 13-17	8.3	3.1	15.4	11.3	NA
Monthly Family Income for January (1993 dollars)[139]					
Less than $500	26.7	15.2	16.8	22.7	24.5
$500-$999	21.5	16.0	20.3	13.0	25.6
$1,000-$1,499	12.8	15.8	17.3	13.3	13.3
$1,500-$1,999	8.4	12.3	10.1	11.2	10.5
$2,000 or more	30.6	40.7	35.5	39.8	26.2
Mean	$1,652	$2,193	$1,911	$2,021	$1,583

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[134] Includes individuals who became SSI applicants five years after their first SIPP interview in the 1990, 1991, 1992, or 1993 SIPP Panel. Based on application records from the matched SSA files.

[135] The Census defines a "family" as a group of two or more persons (one of who is the "householder") related by birth, marriage, or adoption and residing together; all such persons (including related subfamily members) are considered members of one family.

[136] A small number of children in the SIPP do not have a "parent" present because they either live on their own or there is no parent present.

[137] Children include individuals under age 18.

[138] Includes only those with children under 18 who are living in the family at the time of the SIPP interview.

[139] Based on monthly income for January. Income is adjusted using the Consumer Price Index.

Exhibit 5.5 (Continued)
Characteristics of Post-SIPP SSI Applicants in the 1990 through 1993 SIPP Panels[140]

CHARACTERISTICS	Age 18 to 40		Age 41 to 64		Age 0 to 17
	Women	Men	Women	Men	Children
Family Income as a Percent of Poverty for January[141]					
Less than 1.00	48.2	29.3	30.6	32.6	57.5
1.00-1.49	13.2	13.5	18.5	13.9	14.1
1.50-2.00	11.0	14.1	14.6	11.5	10.4
2.00-2.99	12.3	21.0	17.0	20.0	9.6
3.00-3.99	7.3	9.8	8.7	8.3	4.0
4.00 or more	8.0	12.3	10.6	13.5	4.4
Monthly Personal Income for January (in 1993 dollars)[142]					
Less than $500	54.4	43.7	52.5	38.2	NA
$500-$999	26.0	19.5	24.6	16.4	NA
$1,000-$1,499	10.5	15.6	12.8	15.5	NA
$1,500-$1,999	4.4	7.9	3.8	10.6	NA
$2,000 or more	4.6	13.3	6.2	19.3	NA
Mean	$611	$904	$655	$1,211	NA
Household Assets (in 1993 dollars)[143]					
Missing	14.9	21.6	8.7	13.0	12.2
$0-$1,999	41.3	27.7	31.9	25.6	45.0
$2,000-$9,999	17.8	15.6	14.1	14.8	14.6
$10,000-$24,999	8.7	8.7	11.6	13.3	10.3
$25,000 or more	17.3	26.4	33.8	33.3	17.9
Mean (of non-missing values)	$19,643	$45,641	$36,658	$46,065	$22,978
January Labor Earnings					
% w/own labor earnings	37.9	55.3	41.7	57.5	NA
% in family w/earnings[144]	61.4	75.3	71.2	71.2	NA
Program Participation of Family[145]					
AFDC	26.5	2.3	8.2	2.2	35.9
Food Stamps	39.0	13.7	19.7	12.8	51.7
Past Program Participation of Family[146]					
Missing	2.7	5.6	4.0	6.3	NA
Past AFDC Recipient	39.9	2.5	11.9	2.2	NA
Past Food Stamps Recipient	48.8	22.7	33.2	21.3	NA

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[140] Includes individuals who became SSI applicants five years after their first SIPP interview in the 1990, 1991, 1992, or 1993 SIPP Panel. Based on application records from the matched SSA files.

[141] Based on monthly income for January.

[142] Based on monthly income for January. Income is adjusted using the Consumer Price Index.

[143] Total household asset values include home equity, net vehicle equity, business equity, interest earning assets held at banks or other institutions, stock and mutual fund shares, real estate, other assets, and IRA accounts. Assets are adjusted using the Consumer Price Index. There are some missing values for assets because of the timing of the questions. The asset information in each SIPP panel is gathered at different points following the first interview.

[144] Includes earnings from the SSI applicant.

[145] One or more family members received benefits in January of year indicated.

[146] Individual received benefit in or prior to January of year indicated.

Exhibit 5.5 (Continued)
Characteristics of Post-SIPP SSI Applicants in the 1990 through 1993 SIPP Panels[147]

CHARACTERISTICS	Age 18 to 40		Age 41 to 64		Age 0 to 17
	Women	Men	Women	Men	Children
Duration to First SSI Receipt					
No receipt through five years	65.1	65.7	47.7	49.2	56.8
1 Year	5.0	5.8	10.5	10.6	10.2
2 Years	6.1	8.5	10.9	8.1	9.9
3 Years	7.8	7.3	9.8	12.8	9.7
4 Years	10.0	5.4	11.9	11.5	6.7
5 Years	6.1	7.3	9.2	7.9	6.7
Duration to First SSI Application					
1 Year	18.0	18.1	23.0	24.0	17.8
2 Years	20.5	23.1	22.7	20.2	22.8
3 Years	20.5	21.0	19.8	20.7	21.9
4 Years	21.0	18.7	19.8	19.6	19.2
5 Years	20.0	19.1	14.7	15.5	18.3
Health Status					
Missing	17.1	24.3	11.3	15.5	NA
Poor	8.0	7.7	16.8	18.0	NA
Fair	21.5	13.3	27.1	24.5	NA
Good	28.3	26.4	29.2	28.5	NA
Excellent/Very Good	25.1	28.3	15.7	13.5	NA
One Period Disability Status[148]					
Missing	17.1	24.3	11.3	15.5	15.0
No Disability	44.5	42.8	36.9	35.3	61.4
Any Disability[149]	38.4	32.8	51.8	49.2	23.6
• Severe[150]	29.7	22.7	42.6	36.4	NA

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[147] Includes individuals who became SSI applicants five years after their first SIPP interview in the 1990, 1991, 1992, or 1993 SIPP Panel. Based on application records from the matched SSA files.

[148] Based on definition of disability used by McNeil (1993) and Kruse (1997). Definition of disability for children is different from that for adults

[149] There are two definitions of disabilities used for children based on the age of the child. For those under age six, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the usual kind of activities by most children their age. For those age six and over, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the ability to do regular school work. For adults, the definition includes reports a limitation in kind or amount of work or housework he or she can do; has difficulty with any of the functional activities or ADLs; uses a wheelchair; has used a cane, crutches, or walker for more than six months; has a disabling mental or emotional condition.

[150] Includes those who use a wheelchair, used a cane, crutches or walker for more than six months, are unable to do a functional activity, need assistance with an ADL, report being prevented from doing work or housework, or have mental retardation, Alzheimer's, senility, dementia, or a developmental disability such as autism or cerebral palsy.

Exhibit 5.5 (Continued)
Characteristics of Post-SIPP SSI Applicants in the 1990 through 1993 SIPP Panels[151]

CHARACTERISTICS	Age 18 to 40		Age 41 to 64		Age 0 to 17
	Women	Men	Women	Men	Children
Functional Limitation, ADL, and IADL Status					
Missing	17.1	24.3	11.3	15.5	NA
None	54.8	57.8	47.9	49.4	NA
Any[152]	28.1	17.9	40.9	35.1	NA
• Any Severe[153]	22.8	14.6	33.4	28.1	NA
• Multiple	19.4	11.9	30.7	25.8	NA
Multi-period Work Limitation Status[154]					
Missing	25.6	28.7	13.2	16.6	20.7
1991 Panel[155]	14.8	18.1	20.1	21.8	19.6
No limitations	27.6	24.3	24.9	22.2	36.7
Only one month	23.7	18.5	31.1	29.2	10.1
Both months	8.4	10.4	10.8	10.1	12.9

2. Children

Characteristics of post-SIPP SSI child recipients are also reported in *Appendix Exhibit E.8*. We find that the characteristics of post-SIPP child applicants and recipients are very similar, with two exceptions. Post-SIPP recipients were more likely than applicants to have a reported disability (33.0 vs. 23.6 percent) and to have participated in Food Stamps (62.5 vs. 51.7 percent). The percent who had been living in an AFDC family is almost the same as for applicants, indicating that applicants from AFDC families had approximately average allowance rates.

C. Comparison of Post-SIPP SSI Recipients to SSI Recipients During the First SIPP Interview

In *Exhibit 5.6*, we provide a summary of differences in characteristics of existing SSI recipients (i.e., those who were SSI recipients at their first interview) and post-SIPP SSI recipients, by demographic group. Again, we focus on comparisons for young women.[156]

In comparison to existing young female SSI recipients, we find that post-SIPP recipients were more likely to have been married (34.4 vs. 13.3 percent), have had children (67.5 vs. 35.7 percent), participated in AFDC (29.4 vs. 20.6 percent), and were less likely to have reported a disability (50.5 vs. 80.0 percent). For child SSI recipients, we find similar patterns. In

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[151] Includes individuals who became SSI applicants five years after their first SIPP interview in the 1990, 1991, 1992, or 1993 SIPP Panel. Based on application records from the matched SSA files.

[152] Functional Limitations, ADLs, and IADL include the following categories: getting around the home, sitting in chair, showering, dressing, eating, using the toilet, getting out side the home, handling money and bills, preparing a meal, doing light housework, using the telephone, lifting ten pounds, walking stairs, walking 0.25 miles, and walking.

[153] A severe Functional Limitation, ADL, or IADL means that the respondent either required personal assistance or was unable to perform a certain task.

[154] Based on limitations reported in October of current year and October of the following year. See Burkhauser and Wittenburg (1996).

[155] The 1991 SIPP panel did not include 2 topical modules on Functional Limitations.

[156] Interestingly, we find the same general patterns for all adult groups, with the exception of AFDC recipients.

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comparison to existing child SSI recipients, post-SIPP recipients were more likely to have participated in AFDC (37.5 vs. 29.4 percent) and were less likely to have reported a disability (20.2 vs. 56.0 percent). One obvious reason for all of these differences is unobserved changes in characteristics between the time the post-SIPP recipient was observed in SIPP and the first date of SSI receipt.

The large differences in characteristics between SSI recipients at their first interview and post-SIPP SSI recipients are problematic for forecasting the number of potential SSI recipients. As mentioned above, the two most likely characteristics to identify potential SSI recipients would be disability and income. A significant portion of post-SIPP recipients, however, did not have a disability when first observed in SIPP. For example, only 50.5 percent of young, female, post-SSI recipients had a reported disability. Reported disability levels for other demographic groups were similar. Further, over 30 percent of all groups of post-SIPP SSI recipients (see *Appendix Exhibit E.8*) lived in families whose incomes were over 150 percent of poverty, and over 11 percent lived in families whose income was over 300 percent of poverty.

Exhibit 5.6
Comparison of SSI Recipients at their first SIPP Interview
to Post-SIPP Recipients[157]

Demographic Groups	Adults Marital Status: % Married	Adults: % with Own Children	Children: % in Mother-Only Families	Family Income: % Low-Income Families[158]	Program Participation: AFDC	One Period Disability Status: Reported Disability
Young Women (Age 18 to 40)						
SSI Recipients at First Interview	13.3	35.7	NA	67.5	20.6	80.0
Post-SIPP SSI Recipients	34.4	67.5	NA	68.4	29.4	50.5
Young Men (Age 18 to 40)						
SSI Recipients at First Interview	12.0	9.4	NA	57.3	4.3	79.0
Post-SIPP SSI Recipients	30.2	27.0	NA	51.0	4.0	38.3
Older Women (Age 41-64)						
SSI Recipients at 1st Interview	18.6	8.5	NA	80.2	11.5	87.2
Post-SIPP SSI Recipients	38.5	20.5	NA	61.4	7.4	59.8
Older Men (Age 41 to 64)						
SSI Recipients at 1st Interview	35.2	13.6	NA	78.9	4.4	84.2
Post-SIPP SSI Recipients	54.1	24.0	NA	57.7	4.1	53.6
Children (Age 0 to 17)						
SSI Recipients at First Interview	NA	NA	52.2	75.7	29.4	56.0
Post-SIPP SSI Recipients	NA	NA	53.2	69.3	37.5	20.2

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[157] Characteristics represent a summary of *Exhibits 5.3* through *5.5*. Sample is from 1990 through 1993 SIPP panels.

[158] Includes individuals who lived in families whose income in January of the first SIPP interview was 150 percent of poverty or less.

V.   ANALYSIS OF POTENTIAL TARGET AND COMPARISON GROUPS

A. Overview

In Lewin (1998), we outlined a difference-in-difference (DID) methodology that would use the matched data to compare SSI applications and allowances of survey respondents in various "target" and "comparison" (or "natural control") groups. Target groups are defined as groups that are targeted by a specific reform, such as an AFDC/TANF reform. Comparison groups are defined as groups that are not targeted, but whose applications and allowances would be affected in the same way by changes in other environmental factors, such as the economy. The simplest version of the DID methodology would follow a cohort of target and comparison group cases for a few years in the pre-reform period and compare their application and allowance experience in this period to that of a later cohort during the post-period. The impacts of the reforms would be estimated as changes in application and allowance outcomes for the pre- and post-target groups net of changes for the pre- and post-comparison groups.

In this section we explore the feasibility of defining target and comparison groups from the SIPP surveys for the purpose of evaluating the impacts of AFDC/TANF reforms on SSI applications and allowances. That is, we ask if we can define a significant target group of non-recipients that has members who might be pushed into applying for SSI by the reforms, plus a comparison group whose members: 1) will likely file some applications and receive some allowances over the period to be examined, but 2) whose outcomes will not be influenced by the reforms, and 3) whose application and allowances respond to "other factors" that change over the period in the same way as those of the target group members. Statistics presented are unweighted sample means because our primary interest is in assessing the samples available for use in later econometric analyses.

B. Adults

For adults, we examine three key characteristics for defining these groups: whether the individual has a disability when they are observed in SIPP; whether the individual is a parent of a minor child when observed in SIPP; and family income as a percent of poverty. We expect that most of those adults whose SSI applications and allowances would be influenced by the TANF reforms would have a disability, live with at least one own child under 18, and have low family income when they are observed in SIPP. Those who are most likely to also apply for SSI, but not be affected by the reforms, would probably also have a disability and low income, but not live with an own child under 18. We would expect the former group to be predominantly young and predominantly female, while the latter might include many older women as well as both young and older men.

For these tables we count people who have any limitation or who report poor health as having a disability. We use this inclusive definition to both increase the sample sizes of the groups of interest and to capture people whose disabilities might not be very severe when observed, but might become severe in the future. We do not confine the target group to adults who are already TANF recipients. This is because in many states the reforms under consideration are intended to divert families from entering TANF as much as they are intended to help encourage existing recipients to leave.

1. Women

We present descriptive statistics on young women by disability status and parental status for those in families with incomes below 150 percent of poverty (***Exhibit 5.7***). If we consider only individuals with disabilities as potential target or comparison group members, we can define some reasonable groups. The most obvious target group is young mothers with a disability and with incomes under 150 percent of poverty. There are 1,079 young women in the four SIPP panels who were in this group when first observed. Of these, 988 (98.6 percent) were not existing SSI recipients, 425 (39.4 percent) were current AFDC recipients, and 92 (8.5 percent) filed their first SSI application after they were first observed in SIPP and before July 31, 1966.

One comparison group for this first target group is young women who were not mothers when observed and who reported a disability. There are 432 such cases in the SIPP sample, but 24.3 percent of these were already receiving SSI, leaving just 327 who were not,[159] and 44 (10.2 percent) filed their first SSI application after they were first observed in SIPP and before July 31, 1966. This comparison group differs from young mothers with disabilities in ways other than family composition. They are somewhat younger, more educated, more likely to be the only member of their family in the household, more likely to have earnings, and more likely to have severe or multiple functional limitations. Weights or multivariate methods could be used to make adjustments for these differences. One problem that would be difficult to adjust for is that these women may enter the target population for TANF reform at a later date, by becoming mothers. The fact that they are not currently mothers may be related to their relatively young ages.

A second candidate comparison group for this first target group is young mothers with disabilities whose incomes are between 150 and 400 percent of poverty. Descriptive statistics for young women whose family incomes are in this range are present in ***Appendix Exhibit E.9***. There are 926 observations in this group; only very small numbers were either SSI recipients or in AFDC families when first observed in SIPP. They may, however, be a poor comparison group, for two reasons. First, only a small share of these mothers (3.8 percent or 35 women) filed an application for SSI after they were first observed in SIPP and before July 31, 1996. This suggests that applications from only a very small number of these women would be sensitive to the other factors that we would be using them to control for; i.e., most cases in this group would not be very useful as controls. Second, many women in this group might enter the target group for the reforms at a later date. For instance, almost 80 percent were married when observed, and a divorce might well reduce their income to below 150 percent of the federal poverty line. Hence, we are skeptical about using this group as a comparison group.

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[159] A small number in this group reported they were in an AFDC family. Presumably these individuals are not in the actually AFDC family unit, which may exclude some adults in the household.

Exhibit 5.7

Characteristics of Young Women (Age 18 to 40) Who Lived in Families With Income Below 150 Percent of Poverty, by Family and Disability Status[160]

		Parents		Non-Parents	
		With a	Without a	With a	Without a
CHARACTERISTICS	**Total**	**Disability**	**Disability**	**Disability**	**Disability**
Total					
Number	9,691	1,079	5,678	432	2,502
Sample Size by Panel					
1990	2,822	275	1,691	121	735
1991	1,802	218	1,010	84	490
1992	2,459	255	1,443	121	640
1993	2,608	331	1,534	106	637
SSI Application and Recipiency [161]					
SSI Recipient at First SIPP Interview	2.5	8.4	0.3	24.3	1.2
Filed SSI Application after First SIPP Wave and before July 31, 1996	3.8	8.5	3.2	10.2	2.2
Received SSI after First SIPP Wave and before July 31, 1996	2.4	7.4	1.6	9.3	1.0
Program Participation of Family[162]					
AFDC	21.7	39.4	28.5	2.3	2.0
Food Stamps	34.5	56.7	42.3	23.1	9.0
Past Program Participation of Family[163]					
Missing	4.1	10.5	3.2	1.4	8.2
Past AFDC Recipient	31.5	56.6	41.7	2.5	2.5
Past Food Stamps Recipient	44.2	67.7	52.1	35.1	17.6
Age					
18-30	60.6	42.7	55.7	60.0	79.3
31-40	39.4	57.3	44.3	40.0	20.7
Marital Status					
Married	37.4	43.6	49.1	12.0	12.5
Never Married	39.6	21.2	25.5	65.7	75.2
Divorced/Separated/Widowed	23.0	35.0	25.4	22.2	12.4

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[160] Includes individuals who were interviewed in the first wave of the 1990, 1991, 1992, or 1993 SIPP Panels. Characteristics are not weighted. Income is based on amount reported in January of each panel. We count any individual as having a disability if s/he:
- reported a limitation in kind or amount of work or housework he or she can do;
- had difficulty with any of the functional activities or ADLs; uses a wheelchair;
- had used a cane, crutches, or walker for more than six months;
- had a disabling mental or emotional condition;
- reported difficulties in any of the following: getting around the home, sitting in chair, showering, dressing, eating, using the toilet, getting out side the home, handling money and bills, preparing a meal, doing light housework, using the telephone, lifting ten pounds, walking stairs, walking 0.25 miles, or walking; or
- reports that their current health status is "poor."

[161] Based on records from the matched SSA files. An SSI recipient is defined as an individual who is "in payment status"—i.e., SSA records show that this person was scheduled to receive a payment.

[162] One or more family members received benefits in January of year indicated.

[163] Individual received benefit in some period prior to January of year indicated.

Exhibit 5.7 (continued)
Characteristics of Young Women (Age 18 to 40) Who Lived in Families With Income
Below 150 Percent of Poverty, by Family and Disability Status

		Parents		Non-Parents	
CHARACTERISTICS	**Total**	**With a Disability**	**Without a Disability**	**With a Disability**	**Without a Disability**
Race/Ethnicity					
Hispanic	19.5	15.8	22.3	8.6	16.6
Black (excluding Hispanic)	20.0	20.8	21.9	20.8	15.2
White	56.0	60.1	51.4	66.9	62.9
Other	4.5	3.3	4.4	3.7	5.3
Education Attained[164]					
0-11 years	33.9	39.8	36.9	27.3	25.7
12 years	40.7	43.7	42.2	41.7	35.9
13-15 years	18.4	14.4	16.0	23.4	24.7
16 or more years	7.0	2.1	4.9	7.6	13.7
Household Size[165]					
1 person	5.2	0.0	0.0	27.5	15.5
2 persons	19.5	12.3	10.2	36.3	41.0
3-4 persons	44.5	54.9	52.6	24.1	25.3
5 persons or more	30.7	32.8	37.2	12.0	18.1
Family Size[166]					
1 person	15.5	0.0	0.0	54.2	50.8
2 persons	15.3	14.5	12.4	22.5	20.9
3-4 persons	40.9	54.4	52.0	15.5	14.0
5 persons or more	28.3	31.1	35.6	7.9	14.2
Adults in the Household and Family					
% with at least one adult in household (other than respondent)	71.5	61.5	67.9	71.3	83.9
% with at least one adult in family (other than respondent)	57.9	56.6	63.2	44.4	48.7
Own Children[167]					
Percent with Own Children	69.7	100.0	100.0	0.0	0.0
Age of Youngest Child					
• None	30.3	0.0	0.0	100.0	100.0
• 0-2	31.0	32.2	46.7	0.0	0.0
• 3-5	15.3	22.5	21.8	0.0	0.0
• 6-12	18.8	35.4	25.4	0.0	0.0
• 13-17	4.6	9.8	6.0	0.0	0.0

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[164] Includes the number of education years completed. Persons who receive a high school equivalency are included in the 12 years category.

[165] Based on household size at first interview.

[166] The Census defines a "family" as a group of two or more persons (one of who is the "householder") related by birth, marriage, or adoption and residing together; all such persons (including related subfamily members) are considered members of one family.

[167] Includes only those with children under 18 who are living in the family at the time of the SIPP interview.

Exhibit 5.7 (continued)

Characteristics of Young Women (Age 18 to 40) Who Lived in Families With Income Below 150 Percent of Poverty, by Family and Disability Status

		Parents		Non-Parents	
CHARACTERISTICS	Total	With a Disability	Without a Disability	With a Disability	Without a Disability
Monthly Personal Income for January (in 1993 dollars)[168]					
Less than $500	61.6	57.1	59.4	67.1	67.7
$500-$999	28.8	31.5	27.4	31.0	30.6
$1,000-$1,499	8.2	9.9	11.3	1.6	1.5
$1,500-$1,999	1.2	1.3	1.7	0.0	0.1
$2,000 or more	0.1	0.2	0.1	0.0	0.0
Mean	$415	$465	$449	$371	$323
Household Assets (in 1993 dollars)[169]					
Missing	14.4	4.4	13.6	4.4	22.5
$0-$1,999	37.9	51.4	40.9	42.8	24.3
$2,000-$9,999	19.4	19.0	18.2	24.1	21.6
$10,000-$24,999	9.8	10.5	9.2	9.7	11.1
$25,000 or more	18.4	14.6	18.2	19.0	20.5
Mean	$ 25,150	$ 16,313	$ 23,716	$ 23,328	$ 33,869
Labor Earnings					
% with own earnings	36.7	21.9	34.9	30.3	48.3
% in family with earnings[170]	59.1	46.5	61.0	41.0	63.5
Health Status					
Missing	15.9	0.0	15.9	0.0	25.7
Poor	2.2	15.2	0.0	11.8	0.0
Fair	9.4	33.5	5.8	34.7	2.9
Good	27.7	32.6	30.0	31.9	19.6
Excellent/Very Good	44.7	18.6	48.3	21.5	51.9
One Period Disability Status[171]					
Missing	15.9	0.0	15.9	0.0	25.7
No Disability	68.7	1.8	84.1	0.9	74.3
Any Disability[172]	15.4	98.2	0.0	99.1	0.0
• Severe Disability[173]	10.7	67.4	0.0	72.7	0.0

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[168] Based on monthly income for January. Income is adjusted using the Consumer Price Index.

[169] Total household asset values include home equity, net vehicle equity, business equity, interest earning assets held at banks or other institutions, stock and mutual fund shares, real estate, other assets, and IRA accounts. Income is adjusted using the Consumer Price Index. There are some missing values for assets because of the timing of the questions. The asset information in each SIPP panel is gathered at different points following the first interview.

[170] Includes earnings from the respondent

[171] Based on definition of disability used by McNeil (1993) and Kruse (1997).

[172] Reports a limitation in kind or amount of work or housework he or she can do; has difficulty with any of the functional activities or ADLs; uses a wheelchair; has used a cane, crutches, or walker for more than six months; or has a disabling mental or emotional condition.

[173] Includes those who use a wheelchair, used a cane, crutches or walker for more than six months, are unable to do a functional activity, need assistance with an ADL, report being prevented from doing work or housework, or have mental retardation, Alzheimer's, senility, dementia, or a developmental disability such as autism or cerebral palsy.

Exhibit 5.7 (continued)
Characteristics of Young Women (Age 18 to 40) Who Lived in Families With Income
Below 150 Percent of Poverty, by Family and Disability Status

		Parents		Non-Parents	
CHARACTERISTICS	**Total**	**With a Disability**	**Without a Disability**	**With a Disability**	**Without a Disability**
Functional Limitation, ADL, and IADL Status[174]					
Missing	15.9	0.0	15.9	0.0	25.7
None	74.6	39.8	84.1	38.0	74.3
Any[175]	9.5	60.6	0.0	62.0	0.0
• Any Severe[176]	7.7	48.6	0.0	51.6	0.0
• Multiple[177]	5.5	34.3	0.0	38.2	0.0

2. Fathers

Statistics for young men that correspond to those for young women in the previous exhibit appear in ***Exhibit 5.8***. There are 396 fathers who reported disabilities and whose family incomes were below 150 percent of poverty when first observed – about 40 percent of the corresponding figure for mothers. Of these, 91.7 percent were not receiving SSI when first observed in SIPP, 6.6 percent filed their first application for SSI after they were first observed in SIPP and before July 31, 1996, and 13.9 percent were members of AFDC families. These fathers could also be considered as a target group. The effects of TANF reforms on this group will likely be smaller than for the comparable female group because a relatively small share was receiving AFDC when observed. One characteristic of this group that makes them quite different from the corresponding female group is that a very large share was married (91.2 percent vs. 43.6 percent). This is likely to be related to their relatively low AFDC participation, and again suggests that AFDC reforms would have a lesser impact on this group than on their female counterparts.

There are 562 young men in the sample who had disabilities when first observed in SIPP and who were not fathers at the time – a possible comparison group for the male target group identified above. Of these, only 422 (75.1 percent) were not already on SSI (29 percent more than for comparable women), while 51 (9.1 percent) applied for SSI after they were first observed in SIPP and before July 31, 1996. Their characteristics differ from those in the male target group in ways analogous to the differences between the characteristics of the corresponding female target and comparison groups.

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[174] Based on definition of disability used by Hu, Lahiri, Vaughan, and Wixon (1997).

[175] Functional Limitations, ADLs, and IADL include the following categories: getting around the home, sitting in chair, showering, dressing, eating, using the toilet, getting out side the home, handling money and bills, preparing a meal, doing light housework, using the telephone, lifting ten pounds, walking stairs, walking 0.25 miles, and walking.

[176] A severe Functional Limitation, ADL, or IADL means that the respondent either required personal assistance or was unable to perform a certain task.

[177] Includes those who report difficulties with at least two functional limitations, ADLs, or IADLs.

Exhibit 5.8

Characteristics of Young Men (Age 18 to 40) Who Lived in Families With Income Below 150 Percent of Poverty, by Family and Disability Status[178]

CHARACTERISTICS	Total	Parents		Non-Parents	
		With a Disability	Without a Disability	With a Disability	Without a Disability
Total					
Number	6,898	396	2,557	562	3,383
Sample Size by Panel					
1990	1,935	104	727	164	940
1991	1,341	78	514	94	655
1992	1,716	88	619	128	881
1993	1,906	126	697	176	907
SSI Application and Recipiency [179]					
SSI Recipient at First SIPP Interview	3.1	8.3	0.2	24.9	1.1
Filed First SSI Application after First SIPP Wave and before July 31, 1996	3.1	6.6	1.8	9.1	2.6
Started to Receive SSI after First SIPP Wave and before July 31, 1996	1.9	6.1	1.0	5.3	1.5
Program Participation of Family[180]					
AFDC	3.2	13.9	5.2	1.1	0.8
Food Stamps	16.3	44.7	20.6	21.5	8.9
Past Program Participation of Family[181]					
Missing	5.9	1.8	4.6	1.4	8.1
Past AFDC Recipient	3.5	14.9	5.9	1.1	0.8
Past Food Stamps Recipient	24.1	51.3	30.0	30.6	15.3
Age					
18-30	59.8	35.4	43.4	55.5	75.8
31-40	40.2	51.3	56.6	44.5	24.2

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[178] Includes individuals who were interviewed in the first wave of the 1990, 1991, 1992, or 1993 SIPP Panels. Characteristics are not weighted. Income is based on amount reported in January of each panel. We count any individual as having a disability if s/he:

- reported a limitation in kind or amount of work or housework he or she can do;
- had difficulty with any of the functional activities or ADLs; uses a wheelchair;
- had used a cane, crutches, or walker for more than six months;
- had a disabling mental or emotional condition;
- reported difficulties in any of the following: getting around the home, sitting in chair, showering, dressing, eating, using the toilet, getting out side the home, handling money and bills, preparing a meal, doing light housework, using the telephone, lifting ten pounds, walking stairs, walking 0.25 miles, or walking; or
- reports that their current health status is "poor."

[179] Based on records from the matched SSA files. An SSI recipient is defined as an individual who is "in payment status"—i.e., SSA records show that this person was scheduled to receive a payment.

[180] One or more family members received benefits in January of year indicated.

[181] Individual received benefit in some period prior to January of year indicated.

Exhibit 5.8 (continued)
Characteristics of Young Men (Age 18 to 40) Who Lived in Families With Income Below 150 Percent of Poverty, by Family and Disability Status

CHARACTERISTICS	Total	Parents		Non-Parents	
		With a Disability	Without a Disability	With a Disability	Without a Disability
Marital Status					
Married	45.2	91.2	93.1	6.9	9.9
Never Married	45.6	2.0	2.9	73.1	78.4
Divorced/Separated/Widowed	9.2	6.8	4.0	20.0	11.7
Race/Ethnicity					
Hispanic	20.2	16.2	24.1	10.1	19.3
Black (excluding Hispanic)	13.4	10.4	9.2	21.0	15.7
White	61.4	69.7	61.8	66.5	59.4
Other	5.0	3.8	4.9	2.3	5.6
Education Attained[182]					
0-11 years	36.5	45.5	35.4	40.4	35.6
12 years	37.2	37.4	40.5	36.8	34.7
13-15 years	16.8	12.4	15.6	17.1	18.3
16 or more years	9.5	4.8	8.6	5.7	11.4
Household Size[183]					
1 person	11.0	0.0	0.0	29.4	17.6
2 persons	18.0	2.8	1.4	29.4	30.5
3-4 persons	40.1	46.0	53.1	26.7	31.8
5 persons or more	30.9	51.3	45.5	14.6	20.2
Family Size[184]					
1 person	26.4	0.0	0.0	48.4	45.8
2 persons	11.6	3.5	2.4	20.1	18.1
3-4 persons	34.6	45.7	53.0	20.8	21.7
5 persons or more	27.4	50.8	44.6	10.7	14.5
Adults in the Household and Family					
% w/at least one adult in household (other than the respondent)	87.1	94.4	97.0	69.9	81.5
% w/at least one adult in family (other than the respondent)	71.1	93.4	95.2	51.1	53.5

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[182] Includes the number of education years completed. Persons who receive a high school equivalency are included in the 12 years category.

[183] Based on household size at first interview.

[184] The Census defines a "family" as a group of two or more persons (one of who is the "householder") related by birth, marriage, or adoption and residing together; all such persons (including related subfamily members) are considered members of one family.

Exhibit 5.8 (continued)
Characteristics of Young Men (Age 18 to 40) Who Lived in Families With Income Below 150 Percent of Poverty, by Family and Disability Status

		Parents		Non-Parents	
CHARACTERISTICS	**Total**	**With a Disability**	**Without a Disability**	**With a Disability**	**Without a Disability**
Own Children[185]					
Percent with Own Children	42.8	100.0	100.0	0.0	0.0
Age of Youngest Child					
• None	57.2	0.0	0.0	100.0	100.0
• 0-2	22.5	42.7	54.1	0.0	0.0
• 3-5	8.7	22.4	20.2	0.0	0.0
• 6-12	9.7	28.5	21.5	0.0	0.0
• 13-17	1.9	6.4	4.2	0.0	0.0
Monthly Personal Income for January (in 1993 dollars)[186]					
Less than $500	51.2	43.9	29.7	67.4	65.6
$500-$999	29.3	29.8	25.8	31.7	31.5
$1,000-$1,499	12.3	17.7	28.5	0.9	2.5
$1,500-$1,999	5.1	7.1	12.7	0.0	0.1
$2,000 or more	1.2	1.5	3.1	0.0	0.0
Mean	$550	$668	$865	$356	$330
Household Assets (in 1993 dollars)[187]					
Missing	19.5	5.3	14.4	6.0	27.3
$0-$1,999	28.6	37.4	28.4	40.2	25.9
$2,000-$9,999	18.5	25.0	19.8	18.3	16.7
$10,000-$24,999	10.9	13.1	12.4	10.9	9.6
$25,000 or more	22.5	19.2	25.1	24.6	20.5
Mean	$ 33,759	$18,406	$ 32,874	$ 30,606	$ 37,564
Labor Earnings					
% with earnings	51.1	44.9	68.2	24.9	43.3
% in family with earnings[188]	64.5	63.4	80.4	38.3	57.0
Health Status					
Missing	20.6	0.0	15.8	0.0	30.0
Poor	2.3	18.9	0.0	15.3	0.0
Fair	6.4	28.5	3.9	25.8	2.5
Good	22.3	34.1	24.6	36.3	16.9
Excellent/Very Good	48.4	18.4	55.7	22.6	50.6

[185] Includes only those with children under 18 who are living in the family at the time of the SIPP interview.

[186] Based on monthly income for January. Income is adjusted using the Consumer Price Index.

[187] Total household asset values include home equity, net vehicle equity, business equity, interest earning assets held at banks or other institutions, stock and mutual fund shares, real estate, other assets, and IRA accounts. Income is adjusted using the Consumer Price Index. There are some missing values for assets because of the timing of the questions. The asset information in each SIPP panel is gathered at different points following the first interview.

[188] Includes earnings from the SSI recipient.

Exhibit 5.8 (continued)
Characteristics of Young Men (Age 18 to 40) Who Lived in Families With Income Below
150 Percent of Poverty, by Family and Disability Status

		Parents		Non-Parents	
CHARACTERISTICS	**Total**	**With a Disability**	**Without a Disability**	**With a Disability**	**Without a Disability**
One Period Disability Status[189]					
Missing	20.6	0.0	15.8	0.0	30.0
No Disability	65.7	1.5	84.2	0.7	70.0
Any Disability[190]	13.7	98.5	0.0	99.3	0.0
• Severe Disability[191]	8.9	61.9	0.0	66.2	0.0
Functional Limitation, ADL, and IADL Status[192]					
Missing	20.6	0.0	15.8	0.0	30.0
None	72.5	47.2	84.2	52.0	70.0
Any[193]	6.9	52.8	0.0	48.0	0.0
• Any Severe[194]	6.0	45.5	0.0	41.5	0.0
• Multiple Functional[195]	4.5	32.8	0.0	32.6	0.0

There is also a substantial group of young fathers with disabilities whose incomes were above 150 percent and below 400 percent of poverty when first observed (***Appendix Exhibit E.10***). As with young mothers, these fathers could be used as a comparison group for lower income fathers with disabilities, but the issues that made us skeptical about using the corresponding female group as a comparison group for lower income mothers with disabilities are just as much of a problem here.

C. Children

There are also serious problems in defining child target and comparison groups (***Exhibit 5.9***). The problem we found in using disability to define target and comparison groups for young adults is more severe for children. We do not present characteristics of children by disability status because of our earlier finding that only 24 percent of children who first applied for SSI in the five years after they were observed in SIPP were reported to have any disability.

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[189] Based on definition of disability used by McNeil (1993) and Kruse (1997).

[190] Reports a limitation in kind or amount of work or housework he or she can do; has difficulty with any of the functional activities or ADLs; uses a wheelchair; has used a cane, crutches, or walker for more than six months; has a disabling mental or emotional condition.

[191] Includes those who use a wheelchair, used a cane, crutches or walker for more than six months, are unable to do a functional activity, need assistance with an ADL, report being prevented from doing work or housework, or have mental retardation, Alzheimer's, senility, dementia, or a developmental disability such as autism or cerebral palsy.

[192] Based on definition of disability used by Hu, Lahiri, Vaughan, and Wixon (1997).

[193] Functional Limitations, ADLs, and IADL include the following categories: getting around the home, sitting in chair, showering, dressing, eating, using the toilet, getting out side the home, handling money and bills, preparing a meal, doing light housework, using the telephone, lifting ten pounds, walking stairs, walking 0.25 miles, and walking.

[194] A severe Functional Limitation, ADL, or IADL means that the respondent either required personal assistance or was unable to perform a certain task.

[195] Includes those who report difficulties with at least two functional limitations, ADLs, or IADLs.

Use of income to define target and comparison groups is somewhat more attractive for children than for adults. While a vast majority of AFDC children were in families with incomes under 150 percent of poverty, many SSI children were in families with incomes between 150 and 400 percent of poverty. Further, first applications were filed for 303 sample children in the higher income group after the first SIPP interview, and another 126 received first allowances -- much larger than the samples for adults. As with adults, it may be that an event such as job loss or divorce would put these families at risk for AFDC.

Exhibit 5.9
Characteristics of Children (Age 0 to 17) Who Lived in Families With Income
Below 400 Percent of Poverty, by Income Level[196]

CHARACTERISTICS	Total	Lived in Families Whose Income Was Below 150 Poverty	Lived in Families Whose Income Was Between 150 and 400 Percent of Poverty
Total			
Number	44,333	19,104	25,229
Sample Size by Panel			
1990	13,077	5,588	7,489
1991	8,254	3,454	4,800
1992	11,197	4,769	6,428
1993	11,805	5,293	6,512
SSI Application and Recipiency [197]			
SSI Recipient at First SIPP Interview	0.8	1.4	0.3
Filed First SSI Application after First SIPP Wave and before July 31, 1996	2.6	4.4	1.2
Started to Receive SSI after First SIPP Wave and before July 31, 1996	1.2	2.0	0.5
Program Participation of Family[198]			
AFDC	13.4	28.7	1.8
Food Stamps	20.4	44.2	2.3

[196] Includes children from families that were interviewed in the first wave of the 1990, 1991, 1992, or 1993 SIPP Panels. Characteristics are not weighted. Income is based on amount reported in January of each panel.

[197] Based on records from the matched SSA files. An SSI recipient is defined as an individual who is "in payment status"—i.e., SSA records show that this person was scheduled to receive a payment.

[198] One or more family members received benefits in January of year indicated.

Exhibit 5.9 (continued)
Characteristics of Children (Age 0 to 17) Who Lived in Families With Income
Below 400 Percent of Poverty, by Income Level[199]

CHARACTERISTICS	Total	Lived in Families Whose Income Was Below 150 Poverty	Lived in Families Whose Income Was Between 150 and 400 Percent of Poverty
Age			
0-2	19.1	21.4	17.4
3-5	17.8	18.8	17.1
6-12	39.2	38.3	39.8
13-17	24.0	21.6	25.8
Race/Ethnicity			
Hispanic	15.8	23.1	10.3
Black (excluding Hispanic)	16.4	23.7	10.9
White	63.5	48.3	75.1
Other	4.3	4.9	3.8
Household Size[200]			
1 person	0.0	0.0	0.0
2 persons	4.6	5.8	3.7
3-4 persons	49.4	42.9	54.3
5 persons or more	46.0	51.3	41.9
Family Size[201]			
1 person	0.4	0.9	0.0
2 persons	5.5	7.1	4.3
3-4 persons	49.5	43.2	54.3
5 persons or more	44.5	48.7	41.3
One Period Disability Status[202]			
Missing	11.2	15.5	7.9
No Disability	84.8	79.9	88.5
Any Disability	4.0	4.6	3.6

D. Summary of Findings Concerning Target and Comparison Groups

Most of the findings in the assessment of target and comparison groups are discouraging. On the positive side, we can define at least one reasonable target and control group pair – young adults who had disabilities and were parents when first observed and young adults with disabilities who were not parents. These groups have a reasonable number of observations in SIPP, especially if

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[199] Includes children from families that were interviewed in the first wave of the 1990, 1991, 1992, or 1993 SIPP Panels. Characteristics are not weighted. Income is based on amount reported in January of each panel.

[200] Based on household size at first interview.

[201] The Census defines a "family" as a group of two or more persons (one of who is the "householder") related by birth, marriage, or adoption and residing together; all such persons (including related subfamily members) are considered members of one family.

[202] There are two definitions of disabilities used based on the age of the child. For those under age six, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the usual kind of activities by most children their age. For those age six and over, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the ability to do regular school work.

one were to combine the female and male groups. The comparison would be imperfect because of differences in characteristics for the two groups, although it could be improved through the use of multivariate methods.

Unfortunately, use of these groups alone would miss many people who are targets of the welfare reform and who might apply for SSI. The analysis shows that a large share of those who applied for SSI after they were first observed and before July 31, 1996 did not self-report a disability or health condition. Among the 5,678 young mothers with no reported disability and with incomes below 150 percent of poverty, 182 later applied for SSI. While this is only 3.2 percent of the young mothers in this income group with no reported disabilities, it is about two-thirds of the young mothers who later applied. Thus, ignoring this group would miss a very large share of the young women whose SSI application behavior might be affected by TANF reforms.

One might define very low-income mothers without a disability as a second target group, and use very low income women without a disability who are not mothers for comparison. This is problematic, though, because the share of women in the former group whose SSI application behavior is likely to be affected by the TANF reforms is small, making it difficult to identify anything but a very large effect. Further, age, education, and other differences between the two groups are even greater than for the corresponding groups of young women with disabilities. It seems likely that many of the women in this comparison group would eventually become parents, making them possible targets of the TANF reforms.

Defining study and target groups for children is even more problematic, primarily because such a large share of those who did apply in recent years had no reported disability when observed in SIPP.

We conclude that defining deterministic target and comparison groups is quite problematic. While it might be reasonable to make comparisons between low-income parents with disabilities and non-parents with disabilities, this would ignore a substantial share of those targeted by TANF reforms that might apply for SSI. When we consider all low-income parents vs. non-parents, we run into the problem that many of those in the latter group will eventually become parents, and thereby enter the group targeted by TANF reforms.

VI. HAZARD ANALYSIS OF SSI APPLICATIONS AND ALLOWANCES, 1990-1996

A. Specifications for Young Women and Young Men

1. Econometric Model

We use a discrete time logit model to estimate SSI application and allowance hazard rates. This model is represented by the following equation:

$ln\ [P_{id}/(1-P_{id})]= \alpha_d + \beta'X_i + \delta'Z_{id}$

Where:

- $ln[.]$ is the natural log operator;

- P_{id} represents the conditional probability that individual *i* applies for SSI benefits, or receives an allowance, in period *d* after he or she is first observed in SIPP;

- α_d is the "duration effect" at duration *d*. This set of parameters allows for a shift in the hazard at each duration, and each can be thought of as a duration-specific intercept;

- X_i is a (column) vector of explanatory variables that do not vary with duration. In this application, they represent characteristics of the individual when first observed in SIPP;

- β is a vector of coefficients for the Xs;

- Z_{id} is a vector of variables that vary with duration. In this application, they can be specific to the individual, or the individual's state of residence when observed; and

- δ is a vector of coefficients for the Zs.

The left-hand side of the equation is sometimes referred to as the "log-odds ratio" or the "logit" of the hazard rate. The odds-ratio itself is $P_{id}/(1-P_{id})$.

It is important to keep in mind that duration is measured from the point that an individual is first observed in SIPP. Because four SIPP panels are pooled for the analysis, this means that duration does not coincide with calendar time (e.g., 1995 is the third year of duration for the 1993 SIPP panel and the sixth year for the 1990 panel). Some of the duration-varying variables that are used in the analysis are, however, linked to calendar time.

The coefficients of the explanatory variables represent the effects of the variables on the log-odds ratio. Customary practice is to exponentiate each coefficient, to obtain estimates of the proportional shift in the odds ratio associated with a unit change in the explanatory variable, holding other factors constant. For example, if the coefficient on a dummy variable called "disability" in an application equation is 2.0, the exponentiated value is 7.4, meaning that the odds of application are 7.4 times greater for a person with a disability than for a person without a disability, other things constant.

It is important to understand that the proportional effect of a unit change in a variable on the odds ratio is *not* the proportional effect on the conditional probability itself. The size of the effect on the conditional probability depends on the value of the odds-ratio before the unit change. We illustrate this with the hypothetical disability coefficient example in the previous paragraph. Suppose, first, that the odds-ratio for the person without a disability is 0.010 (1 to 100 odds of applying). The exponentiated value of the disability coefficient in the example, 7.4, implies that the odds for a person with a disability who is otherwise identical would be 0.074 (7.4 times higher than for a person without a disability). The conditional probability of application (i.e., hazard) for the person without a disability would be 1.0/101.0 (.010, or 1.0 percent), while that for the person with a disability would be 7.4/107.4 (.069, or 6.9 percent). Thus, given the assumption about the hazard for the persons without a disability, the change in the hazard associated with "disability" would be .059, or 5.9 percentage points. Suppose, instead, that the odds-ratio for the person without a disability is 0.02. Then the odds-ratio for the person with a disability would be .148 (7.4 x .02). The hazards for the two individuals would be .020 (.020/1.020) and .129 (.148/1.148), respectively, and the difference in the hazard rates would be .109 (10.9 percentage points). This is much larger than the 5.9 percentage point effect obtained when the odds-ratio for the person without a disability is .010.

Because estimated effects on hazards depend on the initial value of the hazard, in most instances we consider only the proportional effect on the odds ratio. In some cases, however, the effect on the probability for a person with specified characteristics is of interest. In such cases, we specify those characteristics.

2. Sample

The sample for each adult application model consists of all SIPP respondents in the relevant demographic group (women age 18 to 40 or men age 18 to 40) who had never filed an application for SSI at the time they were first observed in SIPP, and whose family incomes were below 400 percent of poverty in the month they were first observed. A small number of these respondents were excluded from the analysis for other reasons, to be discussed later. The sample for each allowance model is defined analogously. Some respondents used in the allowance analysis were excluded from the application analysis because their first SSI application was filed before they were observed in SIPP.[203]

We chose the 400 percent of poverty threshold based on our findings for post-SIPP SSI applicants and recipients in the descriptive analysis. A lower poverty threshold, such as 150 percent of poverty, would exclude a large share of new applicants or awardees.[204]

For each SIPP respondent in the sample we follow applications and allowances from the time they are first observed in SIPP until July 1996. While actual observations are monthly, we use only annual observations because the number of applications or allowances to respondents in each month is very small. The additional computational time required to estimate monthly models also made monthly analysis impractical.[205] We treat the first seven months of 1996 as a full year in the analysis, which affects the last four duration coefficients and possibly the panel dummies, but has no important implications for other coefficients.[206] The observation period for the analysis varies by SIPP panel: from 1990 to (July) 1996 for the 1990 SIPP panel; from 1991 to 1996 for the 1991 SIPP panel; from 1992 to 1996 for the 1992 SIPP panel; and from 1993 to 1996 for the 1993 SIPP panel.

For each respondent in the sample, there is one observation for each year from the first year that he or she is observed in SIPP up to and including the year in which he or she files an application or obtains an allowance. Thus, an observation is a "person-year," and the sample size is the number of person-years.

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[203] The matched data provide date of first application only. An applicant who is denied benefits may reapply and receive benefits at a later date.

[204] In our descriptive analysis, we found that over 30 percent of those filing their first application or receiving their first benefits in the five years after they were first observed in SIPP had family income above 150 percent of poverty.

[205] A quarterly analysis might be feasible and perhaps should be considered further if the timing of a specific reform is critical to an analysis.

[206] This affects the duration coefficients for durations of four to seven years, because 1996 is year four for the 1993 panel, year five for the 1994 panel, etc. An equivalent specification would be to replace the duration dummies with year dummies. This would have no effect on other coefficients because year is the sum of the panel year and duration. In this equivalent specification, the 1996 dummy coefficient would be reduced by the use of seven months of data only.

We exclude respondents in certain states in our models, for two reasons. First, some smaller states are grouped together in the SIPP, making it impossible for us to assign state-level variables to respondents from these states.[207] All of these states are small, so very few respondents who filed their first application or received their first allowance during the observation period are dropped. Second, a few additional states had no SIPP respondents who filed a first application or received a first allowance during the observation period.[208] We excluded all respondents from these states because we included state dummy variables in the explanatory variables (i.e., state "fixed effects," which are discussed further below); estimates of the dummy coefficients for states with no applicants/allowances are unbounded.[209]

3. Dependent Variables

For each respondent, we generate a value for the dependent variable in each year, up to and including the year in which he or she first apply (application models) or receives an allowance (allowance models), or 1996, whichever comes first. The variable is dichotomous, and is assigned a value of one in a year when the person applies for benefits (application models) or receives an allowance (allowance model), and is zero otherwise.

4. Explanatory Variables included in All Adult Models

A summary of all the explanatory variables used in the econometric analysis for adults appears in *Exhibit 5.10*. All of these models include three general categories of explanatory variables:

- Duration and Panel Variables;

- SIPP Variables; and

- State Variables.

We describe these categories of explanatory variables below.

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[207] The grouped states include Maine, Vermont, Iowa, North Dakota, South Dakota, Alaska, Idaho, Montana, and Wyoming.

[208] For the application models for women, we dropped Connecticut, Delaware, Hawaii, and Rhode Island. For the allowance models for women, we dropped Connecticut, Hawaii, Nevada, and New Jersey. For the application models for men, we dropped West Virginia. For the allowance models for men, we dropped Connecticut, Hawaii, Kansas, and New Hampshire.

[209] Intuitively, an infinitely large, negative fixed effect can "explain" why no respondent in a state applies or receives an allowance.

Exhibit 5.10
Description of Explanatory Variables for Econometric Analysis

Duration and Panel Variables	Description
Duration Intercepts	Seven dummy variables, one for each year of duration after the first SIPP interview.
1990-1992 SIPP Panel Indicators	Dummy variables, each equaling one for individuals who are members of the specified SIPP Panel and zero otherwise (1993 Panel is the omitted category).
SIPP Variables	**Description**
Age	Age is adjusted in every panel to reflect the person's age as of January 1990.[210]
Race: Hispanic Black	A dummy variable equal to one for an individual whose ethnicity is Hispanic, zero otherwise. A dummy variable equaling one for an individual whose race is black (non-Hispanic), zero otherwise. (The omitted category is white)
Education: No high school diploma High school diploma only Some College	A dummy variable equaling one for an individual with no high school diploma, zero otherwise. A dummy variable equaling one for an individual with only a high school diploma, zero otherwise. A dummy variable equaling one for an individual with some college education, zero otherwise.[211]
Student:	A dummy variable equaling one if an individual is a student, zero otherwise.
Children in the family	A dummy variable equaling one if there are children under the age of 18 in the family, zero otherwise.
Age of youngest child	A dummy variable that indicates the youngest child in the family is under the age of 18. Unlike the other SIPP variables, this variable is updated over time.
Other adult in the family	A dummy variable equaling one for an individual who lives in a family with another adult, zero otherwise.
Marital Status: Married Divorced/Widowed	A dummy variable equaling one if an individual is married, zero otherwise. A dummy variable equaling one in an individual is divorced or widowed, zero otherwise. (The omitted category is never married)
Severe Disability:	A dummy variable equaling one if the person has a severe disability, zero otherwise.

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[210] This means that age is the same for all persons in a birth cohort. If we measured age at time of observation in SIPP, respondents in the same birth cohort but different SIPP panels would have different ages. The effect would be to shift the panel dummy coefficients. There would be no effect on the age coefficient.

[211] The omitted education status category includes those who have received at least a college diploma.

Exhibit 5.10 (continued)
Description of Explanatory Variables for Econometric Analysis

SIPP Variables	Description
Any Disability	A dummy variable equaling one if the person is disabled, but not severely so, zero otherwise.[212]
Missing Disability Information	A dummy variable equaling one if the individual is missing disability information due to sample attrition, zero otherwise. [213] (The omitted category is no reported disability)
Health Status: Poor health status	A dummy variable equaling one if the person's self reported health status is poor, zero otherwise.
Fair health status	A dummy variable equaling one if the person's self reported health status is fair, zero otherwise.
Good health status	A dummy variable equaling one if the person's self reported health status is good, zero otherwise; (The omitted category is very good/excellent health status)
AFDC	A dummy variable equaling one for an individual who lives in a family that received AFDC benefits at the first SIPP interview, zero otherwise.
AFDC History	A dummy variable equaling one for an individual who lives in a family that received AFDC benefits at the first SIPP interview or in prior years, zero otherwise.
Food Stamps	A dummy variable equaling one for an individual who receives Food Stamps, zero otherwise.
Food Stamps History	A dummy variable equaling one for an individual who has received Food Stamps at the first interview or in prior years, zero otherwise.
Family Income as a percent of poverty	Equal to the family's January income of the panel year as a percent of poverty.
Personal Earnings	Equal to the individual's earnings in January of the panel year.
Personal Income	Equal to the individual's income in January of the panel year.
State Fixed Effects	A dummy variable equaling one if the individual resides in that state, zero otherwise.[214]
General Assistance (GA) Variables: GA cuts per capita	When a GA cut or increase occurs in a state because of a major program or policy change, we measure the size of the cut per capita as the difference between the average monthly GA caseload in the three months following the quarter in which the change occurred and in the three months preceding that quarter, divided by the state's population.
Lag of GA cuts per capita	The first lag of the GA cuts described above.
SSI Benefit Amount	The annual maximum SSI Benefit amount in the respondent's state for an individual including any supplement (1990 dollars).

[212] Includes individuals who report a limitation in kind or amount of work or housework they can do; has difficulty with any of the functional activities or ADLs; uses a wheelchair; has used a cane, crutches, or walker for more than six months; has a disabling mental or emotional condition.

[213] The omitted disability status category includes those who reported that they had no disability.

[214] The omitted state is West Virginia. Also, additional states were omitted from certain models because of zero cell sizes or because they were not individual identified in the SIPP.

Exhibit 5.10 (continued)
Description of Explanatory Variables for Econometric Analysis

State Program and Economic Variables	Description
1. AFDC Variables: Maximum Monthly AFDC Benefit	1. MMB is the typical maximum AFDC benefit for a three-person family during the first quarter plus the value of Food Stamps for a family receiving that benefit, deflated by the regional CPI-U.[215] If a state changes its nominal AFDC payment rate during the quarter, we use the average rate applicable over the three months.[216] This annual variable is set equal to the value from the first quarter of each year (1990 dollars).
2. Average Tax and Benefit Reduction Rate:	2. The average tax and benefit reduction rate (ATBRR) is the average rate at which disposable income is reduced per each dollar of income, earned or unearned, between zero earnings and the AFDC "earnings cut-off" -- the highest level of gross earnings that a family of three can have and still receive some benefit. Formally: $ATBRR = 1 - (Y - MMB)/E$, where Y is disposable income at the earnings cut-off, and E is the AFDC earnings cut-off. We define disposable income as the sum of earnings, the Earned Income Tax Credit (EITC), AFDC benefits, and Food Stamp benefits, less FICA, where the AFDC benefit is calculated using the earnings disregard for a family that has received AFDC benefits for more than 12 months. ATBRR is an annual variable equal to the value from the first quarter of each year in each state (1990 dollars).
Unemployment Rate: 1. Unemployment Rate 2. Lag of Unemployment Rate: 3. Second Lag of Unemployment Rate:	1. The annual rate of unemployment in each state. 2. The one year lag of the unemployment rate in each state. 3. The two year lag of the employment rate in each state.
State Waiver Variables: 1. California Waiver 2. Massachusetts Waiver: 3. Michigan Waiver 4. Wisconsin Waiver	1. This variable is one in 1994, 1995 and 1996 for sample members who live in California, and zero otherwise. 2. This variable is one in 1996 for sample members who live in Massachusetts, and zero otherwise. 3. This variable is one in 1995 and 1996 for sample members who live in Michigan, and zero otherwise. 4. This variable is one in 1994, 1995, and 1996 for sample members who live in Wisconsin, and zero otherwise.

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[215]A given family's maximum AFDC benefit may differ from the state's "typical" benefit as calculated by the ACF due to factors such as: locality, housing arrangements, family composition, or special needs.

[216] We use several data types and sources to create the MMB variable. For years prior to 1995, we use ACF provided state-level typical maximum monthly payment (MAXPAY) data for a family of three. We obtained maximum monthly Food Stamp benefit and standard deduction data by quarter from the Program Reports and Analysis Branch, USDA. The Food Stamp benefit for a three-person family receiving the typical maximum AFDC benefit is equal to the maximum Food Stamp benefit for a three-person family less 30 percent of the difference between MAXPAY and the Food Stamp standard deduction.

Duration and Panel Variables

The duration variables are dummy variables for the duration–specific intercepts (i.e., α_d). There are seven of these variables.[217] Increases in the intercepts with duration mean that the odds of applying, conditional on not having applied previously, increase with time since the person was observed in SIPP, and vice versa.[218] The panel variables are also dummy variables – one for each of the four SIPP panels. They control for the fact that both selection into the estimation sample and the characteristics of a respondent when first observed in SIPP may depend on when the respondent is first observed. They may also capture panel differences in the SIPP sampling methodologies, especially over sampling of the low-income population in the 1990 SIPP.

We initially experimented with interacting the SIPP panel dummies with the duration dummies in the application models for young women; i.e., allowing a different set of duration dummies for each SIPP panel. This was computationally burdensome, and we also could not reject the null hypothesis of identical duration dummy coefficients for all four panels, using a likelihood ratio test. We later discovered, and corrected, an error in the application data, but did not conduct this test again because of the computational burden.[*219*]

We did not include year dummies in any of the models because they are exactly collinear with duration and panel dummies. Specifically, the year associated with a person-year observation is a deterministic. It is the sum of the person's panel year and the duration associated with the observation. This needs to be kept in mind when interpreting the coefficients because "duration" effects are confounded with "year" effects, and cannot be separated because of the exact colinearity.

SIPP Variables

The SIPP variables are characteristics of individuals during their first interview, and correspond to variables for which we presented descriptive statistics in the previous chapter. It needs to be kept in mind that these variables refer to the respondents' circumstances at the time they were first observed in SIPP, *not* at the time they applied for or received an allowance. In fact, post-SIPP changes in some characteristics (e.g., disability, health status, marital status, and children) may trigger an application. With one exception, we treat future changes in these characteristics as random disturbances, conditioned on respondent characteristics when observed, because we are not able to observe them.

The exception is a dummy variable for a presence of an own child under of the age of 18, a requirement for AFDC eligibility. We first observe this variable in SIPP, and if a child under age 18 is present we "age" the youngest child in later years to determine the presence of a child

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[217] The values for the fifth, sixth and seventh duration coefficients are based diminishing subsamples of the full sample because the number of years in the observation period for each SIPP is inversely related to the first year of the SIPP's panel.

[218] The use of discrete dummies for the duration allows for any form of duration dependence.

[219] Convergence is slow when duration is interacted with panel, evidently because the number of applicants at some durations from some panels is very small. In this model, it is necessary to exclude interactions for durations of seven years for the 1991 panel, six or more years for the 1992 panel, and five or more years for the 1993 panel.

under age 18 in later years, thus creating a time-varying explanatory variable. This measure is imperfect, because new children may be born or a child may leave the respondent before the child reaches age 18 (e.g., via divorce).

The number of characteristic variables in the models is large. While most have significant coefficients, many do not. We have not conducted a specification search to winnow out insignificant variables, for the practical reason that producing the estimates for each specification requires considerable effort and our resources are limited.[220] A stepwise approach to determining the included explanatory variables might well have produced more significant coefficients on fewer variables as exclusion of insignificant variables would reduce multicollinearity, although the test statistics themselves would suffer from pre-test bias.

State Variables

The state variables include a set of dummies for factors that are unique to individual states -- state fixed effects. These are based on the individual's state of residence when observed in SIPP, which, like many other individual characteristics, may change before application or allowance occurs.

We have not tried models without fixed state effects, in part because we think that cross-stock, co-variation is between dependent variables and the other state variables will reflect relationships other than the causal relationships we are interested in, and in part because of the effort involved.

We also include a small number of state program and economic variables to capture the effects of changes in state policy and the strength of a state's economy. These variables are all time varying. Only the time variation in these variables influences the estimated coefficients because the state fixed effects eliminate the influence of cross-state variation.[221] We assign these state variables to respondents based on the state they were living in during their first interview. It is possible that some individuals will have moved since their first SIPP interview to another state. For these individuals, the state variables will be measured with error. These variables include: the unemployment rate; a measure of reductions in state general assistance programs resulting from state policy changes; the state's maximum monthly AFDC benefit for a family of three; and the average tax and benefit reduction rate for an AFDC family of three. Reflecting our past experience with pooled time-series models for SSI participation, we included the lagged values of the GA and unemployment variables as well as the current values.[222]

Finally, as a test of whether the effects of reforms in individual states could be detected in this type of an analysis, we included dummy variables for four states that implemented significant

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[220] The effort required is partly due to computational requirements, but also due to necessary limitations on access to SSA's data.

[221] This specification is analogous to the specification for the pooled time-series analysis of state-level data presented earlier in this report. For that model, we estimated relationships between changes in variables to eliminate the state fixed effects.

[222] This specification was selected prior to the completion of the pooled time-series analysis of state-level data that is presented earlier in this report. The findings from that analysis suggest we should replace the unemployment variable with variables for trade employment per capita and the labor force participation rate, and drop the other variables, with the exception of the GA variable.

AFDC reforms with TANF-like features prior to PRWORA (California, Massachusetts, Michigan, and Wisconsin). These are specified in a very simple way – a permanent change from zero to one in the year in which the reform is first implemented. We chose this simple specification in anticipation of a small number of transitions in each state. The dummy coefficients represent the average annual effect in the post-reform years. Positive, statistically significant coefficients on the latter would be evidence that reforms in these states have already had an impact on SSI applications and/or allowances. Insignificant coefficients, however, might simply reflect high sampling error because of the small number of applications or allowances in the sample for each state.

5.   *Other Explanatory Variables*

We also experiment with models in which dummy variables for each calendar year after the first calendar year interact with variables that identify individuals whose applications and allowances are more likely than others to be affected by factors that also affect AFDC participation, including AFDC reforms. These models allow us to assess whether there were shifts in the hazards for such individuals during the pre-reform period relative to hazards for others – a phenomenon that is suggested by the analysis in the two previous chapters.

The first variable interacted with the year variables is an estimated "AFDC participation probability." To create this variable, we first estimate a linear probability model of AFDC participation for young women and men. The dependent variable in these models is equal to one if the individual receives AFDC during the first SIPP interview, and zero otherwise. For the explanatory variables, we use a subset of the variables from the application and allowance models. We selected variables that seemed likely to be exogenous to AFDC participation and, therefore, insensitive to whether or not the individual participated in AFDC when first observed in SIPP. For the adult models, these variables include severe disability, any disability, disability missing, age, married, black, Hispanic, non-white, no high school diploma, high school diploma only, some college, other adult in the family, and age of youngest child. The results from the AFDC linear probability models for young men and women are present in *Appendix Exhibit E.11*.

Positive coefficients on the interactions of the year dummies with these variables for 1991 through 1996 would indicate an upward shift in the hazards for "likely" AFDC recipients relative to the hazards for "unlikely" AFDC recipients over the period. In interpreting the coefficients, it is important to keep in mind that we are assessing shifts from the hazards for 1990. We cannot identify shifts in 1990 from earlier years because of a lack of data from earlier years. We would expect the shifts to be largest in 1991 through 1994, a period of very high application rates (see Chapter I). Differences between the hazards for likely and unlikely AFDC recipients in 1990 are captured in the basic set of explanatory variables.

For our second specification, we interact a dummy for the presence of own children under the age of 18 with each year dummy (1991 to 1996).[223] Positive coefficients on these interactions would indicate an upward shift in the hazards for low-income parents who are living with their minor children relative to others.

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[223] The base period for the two interaction terms described above is 1990.

We also considered, but did not estimate, a third model of this sort – with interactions between an AFDC dummy variable and each of the year dummies for 1991 to 1996. We decided that we preferred the probabilistic AFDC specification to this deterministic one because we suspect that there are many respondents who are candidates for AFDC participation, but who did not happen to be participating in AFDC at the time we observed them in SIPP. Further, an important feature of the implementation of TANF in many states is vigorous efforts to divert families from entering TANF. Presumably, many of the families who would be diverted were near the margin of participating in AFDC when we observed them in SIPP, but were not participating. The probabilistic specification explicitly recognizes that we cannot cleanly divide the population into AFDC and non-AFDC groups based on a single monthly observation.

B. Results from Adult SSI Application and Allowance Models

1.   Young Women

Applications

We used data for 35,640 SIPP respondents in estimating the applicant models for young women (***Exhibit 5.11***), of whom 545 applied for SSI after they were first observed in SIPP and before August 1996. There are 134,971 person-year observations.

The following discussion of the coefficients for the duration and panel dummies, the characteristics observed at the first SIPP interview, and the state variables focuses on the coefficients for the first of the three models estimated (Model 1). Yet, all the coefficients of these variables are remarkably stable across the three models, with one exception – the coefficient of the children in family variable changes when that variable is interacted with year dummies for 1991 through 1996 (Model 3). The discussion of the coefficients for the first three sets of variables is followed by a discussion of the coefficients of the interactions between the AFDC probability and year (Model 2), and between children in family and year (Model 3).

Duration and Panel Effects

We find no statistically significant shifts of the application hazard rate with duration. The duration coefficients gradually increase from the first year after observation through the sixth. This suggests that a more restrictive specification (e.g., a linear trend in the duration coefficients) might have yielded a statistically significant result. While this could reflect a gradual increase in the hazard with time since observation in SIPP, it might also reflect shifts in the hazard over the sample period. We find that the hazard rates for the 1990, 1991, and 1992 SIPP panels are lower than for the 1994 panel, holding other variables constant; however, the difference is only significant in 1991, and only at the .10 level. There is no obvious explanation of this pattern.

Respondent Characteristics Observed in the First SIPP Interview

Our next set of coefficients is for the respondents' characteristics when first observed in SIPP. We find that the coefficients on age, each level of schooling below college completion (college completion is the base), severe disability, any disability, missing disability information, good, fair or poor health (compared to very good or excellent), divorced/widowed (compared to never

married), past AFDC recipient, and present Food Stamp recipient are all positive and significant at the .10 level or higher.[224] The coefficients on the variables for Hispanic ethnicity, current student, children in family, and family income as a percent of poverty are all negative and significant. While in most cases the signs of these significant coefficients seem intuitively correct, it must be kept in mind that they represent the association between the explanatory variable and the application hazard holding the other explanatory variables constant. Thus, for instance, the negative coefficient on the children in family variable represents the association between having a child in the family and the application hazard holding constant AFDC participation, as well as many other variables that may vary with the presence of children in the family.

The largest point estimates in our model are the coefficients for the disability and health status variables. For a person with a severe disability, the odds of applying are 2.5 times higher than those for a person without a severe disability, holding other things constant (including any disability and health). The odds of applying, for a person who reported a severe disability and poor health, are 15 times higher than those for a person who reports no disability and very good or excellent health.[225] This represents an increase in the overall probability of application from 0.4 percent to 5.8 percent.[226] It is interesting to note that the coefficient on the missing disability variable was also positive and significant. This indicates that attrition from SIPP is greater for SSI applicants than non-applicants, holding other things constant.

We also find a large, positive, and significant coefficient on the past AFDC recipiency variable. The odds of applying for past AFDC recipients are 2.4 times higher than those for others. These results are consistent with the patterns observed in the descriptive analysis for transitions from AFDC to SSI. In interpreting this result, it is important to remember that several other variables that are correlated with AFDC participation in this population are being held constant (e.g., has children in family, received Food Stamps, and family income as a percent of poverty). This finding indicates that, after holding these correlates of AFDC participation constant, there are unobserved characteristics of past AFDC recipients that make them more likely to apply for SSI. We also find that the current AFDC recipiency variable's coefficient is not statistically significant, but note that all current AFDC recipients are also past recipients, by definition, so the coefficient of the current recipiency variable is picking up any difference between the effect of past and current recipiency, which appears to be small.

Effects of State-level Factors

While we do not report the results in *Exhibit 5.11*, we find statistically significant variation in the individual state fixed effects. In *Exhibit 5.12*, we report the odds ratios corresponding to the state fixed effects in the application model. The odds ratios are the odds of applying for individuals who live in each state relative to those who live in West Virginia, other things constant.[227] We find that the largest effects are in South Carolina and Mississippi. The odds of

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[224] A two-tailed test is used.

[225] The combined odds were calculated exponentiating the sum of the coefficients from each of these variables (0.94 + 0.67 +1.09).

[226] This percentage is based on probabilities evaluated at the mean values of all explanatory variables.

[227] West Virginia is the excluded state in the specification and, serendipitously, had the lowest odds ratio, other things constant.

applying for a respondent living in either one of these states were over ten times the odds for a respondent living in West Virginia, other things constant. We also find that the odds of applying are generally higher in states in southern regions, relative to those from other regions. For example, of the nine states that had significantly higher odds of application than West Virginia, eight were in the south (Alabama, Arkansas, Florida, Georgia, Kentucky, Mississippi, North Carolina, and South Carolina). In all of these states, the relative odds of applying were at least four times those for West Virginia. Hence, there seems to be a strong regional component to applications from young women during the pre-reform period, other things constant

We find that while most of the coefficients of the state program and economic variables had the expected sign, they were all very insignificant. This likely reflects the small number of applications in the sample from each state in each year and the high level of unexplained variation in the application decisions of individuals. Recall, too, that the inclusion of state fixed effects means that estimation of these coefficients is relying entirely on time-series co-variation between the variables and applications. Omission of the state fixed effects would likely change the results substantially, but as mentioned previously we would be quite uncertain about the interpretation of the coefficients. We also discovered an error in the coding of the GA cuts variable that has not been corrected in the results presented here and that may explain the insignificant coefficients – the very large cuts in Michigan due to the essential termination of Michigan's program in 1991 were miscoded as occurring in 1992. It may be possible to obtain stronger results by correcting this error, as well as by using alternative specifications of the state variables that incorporate what we have learned from the state-level analysis reported earlier, but we do not expect substantial improvement.

It should also be noted that the coefficient of one variable, the average tax and benefit reduction rate (ATBRR) is quite large, despite its insignificance. Most of the time-series variation in this variable is common across states, because during this period expansion of the Earned Income Tax Credit substantially reduced the ATBRR in all states. We suspect, therefore, that the large coefficient reflects high collinearity with the duration and panel dummies.

None of the coefficients for the specific state welfare reform dummy variables is statistically significant, and three of the four are negative. The one coefficient that is positive, for Massachusetts, is also the largest in magnitude (relative odds ratio of 2.4) and has the highest t-statistic (1.6). This is somewhat surprising given the small size of this state relative to the other three states for which we included welfare reform dummies (California, Michigan, and Wisconsin). Alternative specifications (including correction of the error in the GA variable for Michigan) might yield more significant findings, but the sample sizes involved and the findings from the administrative data analysis suggest there would be no significant payoff to pursuing such specifications.

Time Interactions

The coefficients of the interactions between the AFDC participation probability and the year dummies for 1991 to 1995 are all positive, but not statistically significant. The coefficient for the 1996 interaction is negative and insignificant. We were also unable to reject the null hypothesis that all the coefficients of these interactions are zero.

Despite the insignificance of individual coefficients, as well as the set of coefficients, the pattern of the coefficients, along with what we know from analysis of administrative data, does suggest

that the coefficients reflect something beyond sampling error. It may be that a more restrictive specification (e.g. fitting these coefficients to a quadratic equation) would have yielded stronger evidence of a shift. The coefficients gradually increase through 1994, and then decline through 1996. The t-statistic for the 1994 coefficient is 1.3, and the odds ratio derived from the coefficient's point estimate is 4.6. The interpretation of the latter figure is difficult to understand because it involves a ratio of ratios. The point estimate implies that, in 1994, the odds ratio for a respondent with an AFDC probability of 1.0 divided by the odds ratio for a respondent with an AFDC probability of 0.0 was 4.6 times larger than in 1990, holding other things constant. Thus, the finding is consistent with the hypothesis that, for young women, there was a shift in participation of "likely" AFDC participants from AFDC to SSI during this period, after holding the characteristics observed in SIPP constant.

A similar pattern is found for the coefficients of the interactions between the dummy for children in family and the dummies for 1991 through 1996. All of the coefficients are positive, but only one (for 1992) is statistically significant (at the .10 level only), and the likelihood ratio test cannot reject the null hypothesis that all are zero. Again, it may be that a more restrictive specification would have yield statistically significant evidence of shifts in the relative hazard for young women with children. The 1992 coefficient is the largest coefficient. The associated relative odds ratio is 2.1. This point estimate is interpreted as follows: in 1992 the odds ratio for applications from young mothers relative to the odds ratio for other young women, was 2.1 times as large as it was in 1990. This might reflect a *Zebley* spillover effect among young mothers, as has often been speculated.

We also find that the coefficient for children in family when first observed in SIPP is much greater in magnitude than in Models 1 and 2 (-1.07 in Model 3 vs. –0.62 in both of the other models). The apparent reason for this is that the coefficients in Models 1 and 2 represent seven-year averages of the annual coefficients for this variable, which are less negative after 1990 than in 1991.

While we do not report the results, we also tested additional specifications that included state waiver variables interacted with variables added to the second and third models. These interaction terms were designed to measure any additional effect of being in a target group and living in a state that had a waiver. We created one interaction term each for California, Massachusetts, Michigan, and Wisconsin. The coefficients of all of these terms were very insignificant, which is not very surprising given the sample sizes for each state and the insignificant findings for state variables in the models reported here.

Exhibit 5.11
Hazard Model Estimates for Young Women: First Applications.[228]

Explanatory Variable	Model 1: Base Specification		Model 2:		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
Duration and Panel Variables						
Duration Hazards						
Period 1	-9.60	0.49	-7.57	0.46	-6.71	0.50
Period 2	-9.34	0.64	-7.36	0.57	-6.49	0.62
Period 3	-9.30	0.66	-7.33	0.59	-6.53	0.60
Period 4	-9.15	0.77	-7.15	0.71	-6.31	0.74
Period 5	-9.02	0.87	-7.05	0.78	-6.22	0.82
Period 6	-8.83	1.07	-6.83	0.97	-6.07	0.95
Period 7	-8.89	0.00	-6.80	0.00	-6.02	0.00
1990 SIPP panel member	-0.11 (-0.38)	0.89	-0.12 (-0.38)	0.89	-0.08 (-0.24)	0.93
1991 SIPP panel member	-0.42* (-1.79)	0.66	-0.42* (-1.67)	0.66	-0.40 (-1.56)	0.67
1992 SIPP panel member	-0.21 (-1.26)	0.81	-0.20 (-1.16)	0.82	-0.22 (-1.26)	0.80
Age as of January 1993	0.02* (2.50)	1.02	0.02* (2.22)	1.02	0.02* (2.50)	1.02
Hispanic	-0.25* (-1.77)	0.78	-0.27* (-1.88)	0.76	-0.25* (-1.77)	0.78
Black	0.10 (0.85)	1.10	0.03 (0.21)	1.03	0.10 (0.85)	1.10
No High School Diploma	0.83* (3.37)	2.30	0.75* (2.80)	2.13	0.83* (3.37)	2.30
High School Diploma Only	0.58* (2.42)	1.78	0.56* (2.32)	1.76	0.57* (2.38)	1.78
Some College	0.54* (2.16)	1.71	0.54* (2.16)	1.72	0.54* (2.16)	1.71
Student	-0.35* (-2.32)	0.70	-0.35* (-2.32)	0.71	-0.35* (-2.32)	0.70
Has a Severe Disability	0.94* (7.07)	2.57	0.91* (6.50)	2.49	0.94* (7.07)	2.57
Has a Disability	0.67* (3.81)	1.95	0.66* (3.73)	1.94	0.67* (3.81)	1.95
Missing information on Disability	0.90* (6.38)	2.45	0.91* (6.45)	2.48	0.90* (6.38)	2.45
Reports to be in good health	0.53* (4.27)	1.71	0.54* (4.35)	1.71	0.54* (4.35)	1.71
Reports to be in fair health	0.98* (6.41)	2.66	0.98* (6.41)	2.66	0.98* (6.41)	2.66
Reports to be in poor health	1.09* (5.05)	2.98	1.09* (5.05)	2.97	1.10* (5.09)	3.00

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[228] For more information on the variables, see *Exhibit 5.10.* Values in parentheses are t-statistics. An asterisk(*) indicates significance at the ten percent level or better, using a two-tailed test. Most are also significant at the five percent level. We used the lower standard because of the exploratory nature of the analysis.

Exhibit 5.11 (continued)
**Hazard Model Estimates for Young Women: First Applications**

Explanatory Variable	Model 1: Base Specification		Model 2:		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
SIPP Variables						
Married	-0.05		0.03		-0.05	
	(-0.34)	0.95	(0.17)	1.03	(-0.34)	0.95
Divorced/ Widow	0.22*		0.21*		0.21*	
	(1.76)	1.24	(1.68)	1.24	(1.68)	1.24
Children in Family	-0.62*		-0.74*		-1.09*	
	(-4.77)	0.54	(-3.66)	0.48	(-3.04)	0.34
Age of Youngest Child	-0.23		-0.28		-0.23	
	(-0.75)	0.79	(-0.89)	0.76	(-0.75)	0.79
Other adult in the family	-0.04		0.02		-0.04	
	(-0.34)	0.96	(0.14)	1.02	(-0.34)	0.96
Receives AFDC	-0.23		-0.23		-0.23	
	(-1.38)	0.79	(-1.38)	0.79	(-1.38)	0.79
Received AFDC in previous periods	0.86*		0.86*		0.86*	
	(5.66)	2.36	(5.66)	2.37	(5.66)	2.36
Receives Food Stamps	0.53*		0.52*		0.53*	
	(2.88)	1.69	(2.83)	1.68	(2.88)	1.69
Received Food Stamps in Previous Periods	-0.04		-0.04		-0.04	
	(-0.24)	0.96	(-0.24)	0.96	(-0.24)	0.96
Family Income as a percent of poverty	-0.17*		-0.17*		-0.17*	
	(-2.66)	0.85	(-2.66)	0.85	(-2.66)	0.85
Personal earnings (x 1,000)	-0.10	0.90	-0.10		-0.10	
	(-0.53)		(-0.53)	0.91	(-0.53)	0.90
Personal income (x 1,000)	-0.30	0.74	-0.30		-0.29	
	(-1.58)		(-1.58)	0.74	(-1.53)	0.75
State Fixed Effects	Y		Y		Y	
State Program and Economic Variables						
GA cuts per capita	0.00		0.00		0.02	
	(0.00)	1.00	(0.00)	1.00	(0.59)	1.02
Lag of GA cuts per capita	-0.02		-0.02		-0.03	
	(-0.67)	0.98	(-0.65)	0.98	(-0.97)	0.97
SSI Benefit Amount	0.00		0.00		-0.01	
	(0.00)	1.00	(0.00)	1.00	(-0.91)	0.99
Maximum Monthly AFDC Benefit	0.00		0.00		0.00	
	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00
Average Tax/Benefit Reduction Rate	1.81		2.10		2.86	
	(1.10)	6.14	(1.16)	8.18	(1.57)	17.38
Unemployment Rate	-0.02		-0.03		-0.09	
	(-0.23)	0.98	(-0.32)	0.97	(-0.94)	0.92
Lag of Unemployment Rate	0.08		0.04		0.04	
	(0.96)	1.08	(0.45)	1.04	(0.45)	1.04

Exhibit 5.11 (continued)
Hazard Model Estimates for Young Women: First Applications

Explanatory Variable	Model 1: Base Specification		Model 2:		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
State Program and Economic Variables (continued)						
Second Lag of Unemployment Rate	0.04 (0.55)	1.04	-0.01 (-0.13)	0.99	0.02 (0.25)	1.02
California Welfare Reform (94,95,96)	-0.54 (-1.15)	0.58	-0.52 (-1.10)	0.59	-0.60 (-1.26)	0.55
Massachusetts Welfare Reform (95,96)	0.89 (1.55)	2.43	0.86 (1.49)	2.36	0.80 (1.38)	2.22
Michigan Welfare Reform (95,96)	-0.16 (-0.30)	0.86	-0.30 (-0.56)	0.74	-0.37 (-0.69)	0.69
Wisconsin Welfare Reform (94,95,96)	-0.38 (-0.41)	0.68	-0.48 (-0.52)	0.62	-0.45 (-0.49)	0.64
Year Interactions						
Probability of AFDC receipt * 1991	N/A	N/A	0.54 (0.44)	1.71	N/A	N/A
Probability of AFDC receipt * 1992	N/A	N/A	0.97 (0.78)	2.64	N/A	N/A
Probability of AFDC receipt * 1993	N/A	N/A	1.01 (0.84)	2.74	N/A	N/A
Probability of AFDC receipt * 1994	N/A	N/A	1.52 (1.28)	4.59	N/A	N/A
Probability of AFDC receipt * 1995	N/A	N/A	0.83 (0.68)	2.30	N/A	N/A
Probability of AFDC receipt * 1996	N/A	N/A	-0.45 (-0.33)	0.64	N/A	N/A
Children in family * 1991	N/A	N/A	N/A	N/A	0.26 (0.70)	1.29
Children in family * 1992	N/A	N/A	N/A	N/A	0.74* (1.94)	2.10
Children in family * 1993	N/A	N/A	N/A	N/A	0.42 (1.10)	1.52
Children in family * 1994	N/A	N/A	N/A	N/A	0.59 (1.55)	1.80
Children in family * 1995	N/A	N/A	N/A	N/A	0.60 (1.56)	1.83
Children in family * 1996	N/A	N/A	N/A	N/A	0.29 (0.76)	1.33
N	134,971	N/A	134,971	N/A	134,971	N/A
Applications	545	N/A	545	N/A	545	N/A
Log Likelihood	-3,146.30	N/A	-3,143.66	N/A	-3,142.37	N/A
Likelihood Ratio Test Statistic[229] (vs. Model 1)	N/A		5.34		7.86	
Degrees of Freedom	N/A		6		6	

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[229] The 5 percent critical value for this statistic, which has a chi-square distribution with six degrees of freedom if all the year interaction coefficients are zero for the population, is 12.6.

Exhibit 5.12
Odds Ratios from State Fixed Effects for Applications from Young Women[230]
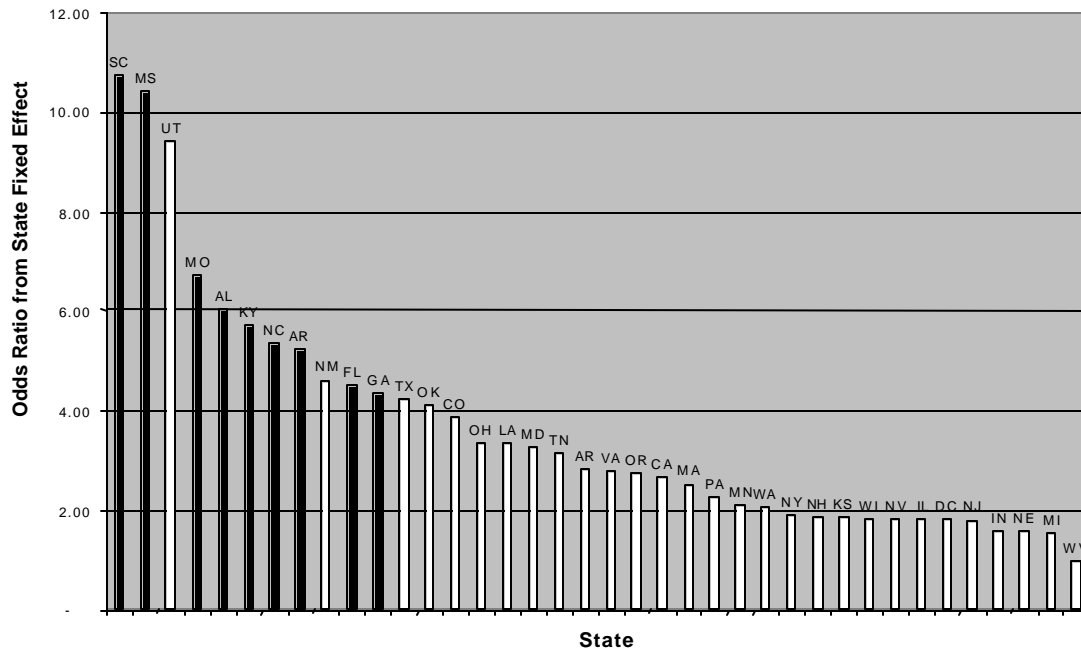
Allowances

We used data for 35,640 SIPP respondents in estimating the allowance models for young women (***Exhibit 5.13***), of whom 313 received first SSI allowances after they were first observed in SIPP and before August 1996. There are 133,414 person-year observations.

Many of the coefficients in these allowance models are similar to the corresponding coefficients in the application models. To a first approximation, identical coefficients for an explanatory variable in the two models means that small changes in the variable have no appreciable impact on the allowance rate.[231] The following discussion focuses on variables whose coefficients are substantially different in the two models.

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[230] The black bars indicate that the state's fixed effect is significantly different from West Virginia at the 5 percent level

[231] This interpretation is an approximation for two reasons. First, equal changes in log-odds ratios for applications and allowances don't exactly translate into equal changes in (conditional) application and allowance probabilities, although for small changes the changes are very close. Consider the following illustration, which uses the formula: probability = odds/(1 + odds). Suppose the odds of application are initially 5.0 to 95.0 (5 percent probability) and the odds of allowance are initially 2.5 to 97.5 (2.5 percent probability), implying an allowance probability of 50 percent (2.5/5). The application and allowance odds ratios are, respectively, .05263 and .02564, and the log odds ratios are, respectively, -2.9445 and –3.6636. If we increase each by .01 (a one percent increase in the odds ratio), the probabilities of application and allowance increase to 5.047 and 2.524 percent, respectively, implying an allowance rate of 50.01 percent.

The second reason that the interpretation is an approximation is that the set of applications associated with the first allowances in the allowance model sample is not identical to the set of first applications in the sample for the application model. Although the intersection of these two sets is very large, differences between these sets could explain some of the differences in the application and allowance model coefficients.

Exhibit 5.13
Hazard Model Estimates for Young Women: First Allowances[232]

Explanatory Variable	Model 1: Base Specification		Model 2:		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
Duration and Panel Variables						
Duration Hazards						
Period 1	-16.82	1.01	-15.12	0.77	-15.42	1.09
Period 2	-16.73	1.11	-15.11	0.78	-15.50	1.00
Period 3	-16.62	1.23	-14.94	0.92	-15.41	1.09
Period 4	-16.47	1.44	-14.72	1.15	-15.18	1.38
Period 5	-16.59	1.27	-14.84	1.02	-15.37	1.14
Period 6	-16.97	0.87	-15.16	0.74	-15.80	0.74
Period 7	-16.83	0.00	-14.86	0.00	-15.50	0.00
1990 SIPP panel member	0.13 (0.34)	1.14	0.02 (0.05)	1.02	0.18 (0.41)	1.20
1991 SIPP panel member	0.02 (0.07)	1.02	-0.08 (-0.25)	0.93	0.00 (0.00)	1.00
1992 SIPP panel member	-0.30 (-1.32)	0.74	-0.33 (-1.40)	0.72	-0.31 (-1.30)	0.73
SIPP Variables						
Age as of January 1993	0.06* (5.45)	1.06	0.06* (5.00)	1.06	0.06* (5.45)	1.06
Hispanic	-0.52* (-2.55)	0.59	-0.56* (-2.71)	0.57	-0.52* (-2.55)	0.59
Black	0.07 (0.45)	1.07	0.00 (0.00)	1.00	0.07 (0.45)	1.07
No High School Diploma	1.13* (3.14)	3.10	1.05* (2.81)	2.86	1.13* (3.14)	3.10
High School Diploma Only	0.78* (2.19)	2.18	0.77* (2.16)	2.15	0.78* (2.19)	2.18
Some College	0.76* (2.07)	2.13	0.76* (2.07)	2.14	0.76* (2.07)	2.13
Student	-0.48* (-2.22)	0.62	-0.46* (-2.13)	0.63	-0.48* (-2.22)	0.62
Has a Severe Disability	1.46* (8.64)	4.32	1.41* (7.79)	4.10	1.46* (8.64)	4.31
Has a Disability	0.88* (3.83)	2.42	0.87* (3.77)	2.40	0.88* (3.83)	2.41

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[232] For more information on the variables, see *Exhibit 5.10*. Values in parentheses are t-statistics. An asterisk (*) indicates significance at the 10 percent level or better, using a two-tailed test.

Exhibit 5.13 (continued)
Hazard Model Estimates for Young Women: First Allowances

Explanatory Variable	Model 1: Base Specification		Model 2:		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
SIPP Variables (continued)						
Missing Information on Disability	0.89* (4.32)	2.43	0.90* (4.35)	2.45	0.89* (4.32)	2.43
Reports to be in Good Health	0.52* (2.95)	1.68	0.52* (2.95)	1.68	0.52* (2.95)	1.68
Reports to be in Fair Health	0.96* (4.68)	2.62	0.95* (4.63)	2.59	0.96* (4.68)	2.61
Reports to be in Poor Health	1.45* (5.62)	4.25	1.45* (5.62)	4.26	1.45* (5.60)	4.27
Married	-0.30 (-1.59)	0.74	-0.21 (-0.89)	0.81	-0.31* (-1.64)	0.73
Divorced/Widow	-0.09 (-0.55)	0.91	-0.09 (-0.55)	0.91	-0.09 (-0.55)	0.91
Children in Family	-0.82* (-4.77)	0.44	-0.99* (-3.51)	0.37	-1.92* (-3.78)	0.15
Age of Youngest Child	-0.45 (-1.25)	0.64	-0.50 (-1.36)	0.61	-0.45 (-1.25)	0.64
Other Adult in the Family	0.26* (1.71)	1.30	0.34* (1.93)	1.40	0.26* (1.71)	1.30
Receives AFDC	-0.51* (-2.37)	0.60	-0.52* (-2.41)	0.59	-0.50* (-2.33)	0.60
Received AFDC in Previous Periods	0.63* (3.10)	1.87	0.63* (3.10)	1.88	0.63* (3.10)	1.87
Receives Food Stamps	1.04* (4.14)	2.84	1.04* (4.14)	2.83	1.04* (4.14)	2.82
Received Food Stamps in Previous Periods	-0.08 (-0.34)	0.93	-0.08 (-0.34)	0.92	-0.08 (-0.34)	0.93
Family Income as a Percent of Poverty	-0.29* (-3.30)	0.75	-0.29* (-3.30)	0.75	-0.29* (-3.30)	0.75
Personal Earnings (x 1,000)	-0.76* (-3.45)	0.47	-0.73* (-3.29)	0.48	-0.77* (-3.50)	0.46
Personal Income (x 1,000)	0.38* (1.80)	1.47	0.35 (1.64)	1.42	0.39* (1.85)	1.47
State Fixed Effects	Y		Y		Y	

Exhibit 5.13 (continued)
Hazard Model Estimates for Young Women: First Allowances

Explanatory Variable	Model 1: Base Specification		Model 2:		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
State Program and Economic Variables						
GA Cuts Per Capita	0.04 (0.80)	1.04	0.04 (0.78)	1.04	0.06 (1.18)	1.06
Lag of GA Cuts Per Capita	-0.02 (-0.41)	0.98	-0.02 (-0.39)	0.98	-0.03 (-0.59)	0.97
SSI Benefit Amount	0.01 (0.71)	1.01	0.01 (0.67)	1.01	0.01 (0.67)	1.01
Maximum Monthly AFDC Benefit	0.01 (1.00)	1.01	0.01 (0.91)	1.01	0.01 (0.91)	1.01
Average Tax and Benefit Reduction Rate	-1.57 (-0.71)	0.21	-1.10 (-0.45)	0.33	-0.15 (-0.06)	0.86
Unemployment Rate	0.05 (0.42)	1.05	0.01 (0.08)	1.01	-0.06 (-0.48)	0.94
Lag of Unemployment Rate	0.06 (0.53)	1.07	0.05 (0.42)	1.05	0.07 (0.58)	1.08
Second Lag of Unemployment Rate	0.10 (1.06)	1.10	0.05 (0.50)	1.05	0.09 (0.87)	1.10
California Welfare Reform (94,95,96)	0.68 (0.94)	1.97	0.46 (0.57)	1.59	0.69 (0.92)	1.99
Massachusetts Welfare Reform (95,96)	0.96 (1.33)	2.60	-0.34 (-0.25)	0.71	0.90 (1.23)	2.45
Michigan Welfare Reform (95,96)	1.87* (2.27)	6.52	1.31* (1.20)	3.72	1.65 (2.01)	5.19
Wisconsin Welfare Reform (94,95,96)	-0.03 (-0.03)	0.97	-0.71 (-0.52)	0.49	-0.04 (-0.04)	0.96
Year Interactions						
Probability of AFDC Receipt * 1991	N/A	N/A	2.34 (1.14)	10.38	N/A	N/A
Probability of AFDC Receipt * 1992	N/A	N/A	1.67 (0.77)	5.33	N/A	N/A
Probability of AFDC Receipt * 1993	N/A	N/A	1.35 (0.63)	3.86	N/A	N/A
Probability of AFDC Receipt * 1994	N/A	N/A	1.98 (0.95)	7.21	N/A	N/A
Probability of AFDC Receipt * 1995	N/A	N/A	0.96 (0.44)	2.61	N/A	N/A
Probability of AFDC Receipt * 1996	N/A	N/A	-1.60 (-0.65)	0.20	N/A	N/A
Children in Family * 1991	N/A	N/A	N/A	N/A	1.19* (2.32)	3.28
Children in Family * 1992	N/A	N/A	N/A	N/A	1.31* (2.45)	3.71

Exhibit 5.13 (continued)
Hazard Model Estimates for Young Women: First Allowances

Explanatory Variable	Model 1: Base Specification		Model 2:		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
Year Interactions (continued)						
Children in Family * 1993	N/A	N/A	N/A	N/A	0.90 (1.67)	2.46
Children in Family * 1994	N/A	N/A	N/A	N/A	1.20* (2.26)	3.31
Children in Family * 1995	N/A	N/A	N/A	N/A	1.35* (2.48)	3.87
Children in Family * 1996	N/A	N/A	N/A	N/A	1.01 (1.71)	2.75
N	133,414	N/A	133,414	N/A	133,414	N/A
Allowances	313	N/A	313	N/A	313	N/A
Log Likelihood	-1,811.36	N/A	-1,807.33	N/A	-1,805.90	N/A
Likelihood Ratio Test Statistic[233] (vs. Model 1)	N/A		8.06		10.92	
Degrees of Freedom	N/A		6		6	

Duration and Panel Effects

As in the application models, we find no statistically significant shifts of the allowance hazard rate with duration or across SIPP panels. The pattern of duration coefficients suggests an initial increase in the allowance hazard with duration through the fourth year, then a decline. This may reflect time, rather than duration effects, but it is not possible to tell.

Respondent Characteristics Observed in the First SIPP Interview

Most of the allowance coefficients for the characteristics observed at the first SIPP interview are quite similar to the corresponding coefficients from the application model, and almost all are significant at the ten percent level or greater. There are three important exceptions. First, comparison of the coefficients for the disability and health variables in the two equations shows that severe disability and poor health both increase the estimated probability of an allowance. The odds of a first allowance for a person with a severe disability are 4.3 times greater than those for a person without a severe disability, holding other things constant. By comparison, the odds of a person with a disability applying are just 2.5 times greater than the odds of a person without a severe disability applying. Similarly, the combined odds of an allowance for a person who reported a severe disability and poor health are 44 times those for a person who reports no disability and is in very good or excellent health.[234] The corresponding figure for applications is 15. Thus, it appears that those applicants who have severe disabilities and poor health, according

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[233] The 5 percent critical value for this statistic, which has a chi-square distribution with six degrees of freedom if all the year interaction coefficients are zero for the population, is 12.6.

[234] The combined odds were calculated exponentiating the sum of the coefficients from each of these variables (1.46 + 0.88 +1.45).

to SIPP, are more likely to receive an allowance consistent with the design of SSI. This also provides an indication that severity of disability and poor health as measured in SIPP are substantially correlated with the severity standards used by SSA in making disability determinations.

Second, current receipt of AFDC benefits reduces the allowance hazard, holding past receipt (and other factors) constant, whereas past receipt of AFDC benefits, in the absence of current receipt, has about the same effect on odds of an allowance as on applications. This result might be explained in a number of different ways, but it is hard to draw any conclusion.[235]

Third, comparison of the family income and personal earnings coefficients in the application and allowance models suggests that both of these variables have a greater impact on the odds of an application than on the odds of an allowance, which is not very surprising. What is perhaps more surprising is that the personal income coefficients imply that personal income increases the odds of an allowance, holding family income and personal earnings constant.[236]

Effects of State-level Factors

Similar to the applicant models, we find that the state fixed effects are generally larger in the southern states.[237] We also find that the pattern of estimates is similar across the applicant and allowance models, though there are some exceptions.[238] The range of estimates is approximately twice as large in the allowance models as in the application models. Similar to the application models, the coefficient estimates indicate a regional component to allowances for young women; however, because of the limited sample sizes of allowances it is difficult to capture any statistically significant effects.

As in the application models, the state-level variables for economic and program factors almost all have very small and statistically insignificant coefficients. The coefficient on the average tax and benefit reduction rate for AFDC families is very large, again, and the very small t-statistic suggests high multicollinearity between this variable and the duration and panel dummies.

Given the insignificant coefficients on each of the four state welfare reform dummies in the application equation, we were surprised to find a positive and statistically significant coefficient on the Michigan welfare reform dummy in the allowance equation. This result by itself suggests that welfare reform in Michigan had a positive effect on SSI allowances in Michigan, but the fact that we found no discernable effect on applications makes this interpretation problematic. Correction of the error in the GA data for Michigan might substantially change this coefficient.

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[235] For instance, lack of current support might make the applicant who is a past, but not current, AFDC recipient more intent on obtaining SSI benefits than the applicant who is a current AFDC recipient. Alternatively, adjudicators may be more "hard nosed" toward applicants who have AFDC support, or may erroneously count the applicant's share of family AFDC support as income in conducting the SSI means test (perhaps because the applicant fails to identify the AFDC income as AFDC income). There are many other possibilities

[236] It may be that unearned personal income includes other disability benefits (including workers' compensation and DI) in many cases. If so, the personal income variable may reflect evidence of disability that is not otherwise controlled for in the model, at least after controlling for personal earnings, but this is speculation.

[237] We do not report the individual state fixed effects.

[238] Certain states, such as California and New York, had large negative estimates in the allowance model, but relatively small estimates in applicant model.

Time Interactions

We find that the allowance model coefficients of the interactions between the AFDC participation probability and the year dummies for 1991 to 1995 (Model 2) are all larger than the corresponding coefficients in the application equations -- in some cases substantially so -- but also statistically insignificant. As in the application equation, the coefficient for the 1996 interaction is negative and insignificant. We were also unable to reject the null hypothesis that all the coefficients of these interactions are zero. The pattern of coefficients suggests that allowance rates for high probability AFDC cases increased relative to those for low probability cases early in the period, but that this increase was not sustained through the end of the period.

The coefficients of the interactions between the dummy for children in family and the dummies for 1991 through 1996 (Model 3) are all positive, and four of the five are statistically significant. The corresponding hazard ratios are on the order of 3.0 for each year – i.e., there appears to have been a three-fold increase in the allowance hazard for women with children relative to the hazard for women without children after 1990. All of these coefficients are larger than the corresponding coefficients from the application equation, indicating a positive shift in allowance rates for young women with own children relative to those for young women without own children after 1990.

2.   Young Men

Applications

We used data for approximately 33,062 SIPP respondents in estimating the applicant models for young men (***Exhibit 5.14***), of whom 440 applied for SSI after they were first observed in SIPP and before August 1996. The number of person-year observations is 120,214.

We estimated the same three models as for young women, but found that the coefficients of the interactions between AFDC participation probabilities with year dummies for 1991 through 1996 in Model 2 had extraordinarily high standard errors. This was due to very low variation in the AFDC participation probabilities themselves, which in turn reflected the very small share of men in the sample who participated in AFDC when they were observed in SIPP, and the inability of the AFDC participation model to predict high probability cases (see ***Appendix Exhibit E.11***).[239] Hence, we only report the results for Models 1 and 3 here.

Some of the findings for young men are similar to those for young women, but there are some striking differences. The latter may be substantially due to the relatively high AFDC participation rate for young women. We focus on the differences in the following discussion.

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[239] No predicted AFDC participation probability for the young men in the sample exceeds 10 percent, compared to a maximum of 56 percent for young women.

Exhibit 5.14
Hazard Model Estimates for Young Men: First Applications.[240]

Explanatory Variable	Model 1: Base Specification		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
Duration and Panel Variables				
Duration Hazards				
Period 1	-8.72	0.56	-7.83	0.55
Period 2	-8.42	0.76	-7.55	0.73
Period 3	-8.44	0.75	-7.60	0.70
Period 4	-8.57	0.65	-7.72	0.62
Period 5	-8.42	0.76	-7.57	0.72
Period 6	-8.38	0.80	-7.55	0.74
Period 7	-8.15	0.00	-7.24	0.00
1990 SIPP panel member	-0.03 (-0.09)	0.97	-0.01 (-0.03)	0.99
1991 SIPP panel member	0.00 (0.00)	1.00	0.02 (0.08)	1.02
1992 SIPP panel member	0.00 (0.00)	1.00	0.01 (0.05)	1.01
SIPP Variables				
Age as of January 1993	0.02* (2.22)	1.02	0.02* (2.22)	1.02
Hispanic	0.04 (0.26)	1.04	0.04 (0.26)	1.04
Black	0.36* (2.81)	1.43	0.36* (2.81)	1.43
No High School Diploma	0.86* (3.26)	2.36	0.86* (3.26)	2.36
High School Diploma Only	0.82* (3.17)	2.27	0.82* (3.17)	2.27
Some College	0.68* (2.48)	1.97	0.68* (2.48)	1.97
Student	-0.50* (-2.82)	0.60	-0.50* (-2.82)	0.60
Has a Severe Disability	1.02* (6.18)	2.78	1.02* (6.18)	2.78
Has a Disability	0.95* (5.40)	2.59	0.95* (5.40)	2.58
Missing Information on Disability	1.08* (7.71)	2.94	1.08* (7.71)	2.94
Reports to be in Good Health	0.61* (4.49)	1.83	0.61* (4.49)	1.83

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[240] For more information on the variables, see ***Exhibit 5.10***. Values in parentheses are t-statistics. An asterisk (*) indicates significance at the 10 percent level or better, using a two-tailed test.

Exhibit 5.14 (continued)
Hazard Model Estimates for Young Men: First Applications

Explanatory Variable	Model 1: Base Specification		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
SIPP Variables (continued)				
Reports to be in Fair Health	0.76* (3.98)	2.14	0.76* (3.96)	2.15
Reports to be in Poor Health	1.02* (4.13)	2.76	1.02* (4.13)	2.76
Married	-0.36* (-1.90)	0.70	-0.36* (-1.90)	0.70
Divorced/Widow	0.40* (2.68)	1.49	0.40* (2.68)	1.49
Children in Family	-0.05 (-0.28)	0.95	-0.54 (-0.97)	0.58
Age of Youngest Child	-0.82* (-1.73)	0.44	-0.85* (-1.79)	0.43
Other Adult in the Family	0.01 (0.07)	1.01	0.01 (0.07)	1.01
Receives AFDC	19.82 (0.00)	--	19.81 (0.00)	--
Received AFDC in Previous Periods	-20.19 (0.00)	--	-20.18 (0.00)	--
Receives Food Stamps	0.13 (0.62)	1.14	0.13 (0.62)	1.14
Received Food Stamps in Previous Periods	0.34* (2.10)	1.41	0.34* (2.10)	1.40
Family Income as a Percent of Poverty	-0.02 (-0.32)	0.98	-0.02 (-0.32)	0.98
Personal Earnings (x 1,000)	0.15 (0.89)	1.16	0.15 (0.89)	1.16
Personal Income (x 1,000)	-0.67* (-3.64)	0.51	-0.66* (-3.59)	0.51
State Fixed Effects	Y		Y	
GA Cuts Per Capita	-0.04 (-1.14)	0.96	-0.03 (-0.83)	0.97
Lag of GA Cuts Per Capita	0.07* (2.19)	1.07	0.06* (1.82)	1.07
SSI Benefit Amount	0.01 (1.00)	1.01	0.01 (0.91)	1.01
Maximum Monthly AFDC Benefit	-0.01 (-1.25)	0.99	-0.01 (-1.25)	0.99
Average Tax and Benefit Reduction Rate	3.00 (1.58)	20.01	3.36* (1.70)	28.74

Exhibit 5.14 (continued)
Hazard Model Estimates for Young Men: First Applications

Explanatory Variable	Model 1: Base Specification		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
State Program and Economic Variables				
Unemployment Rate	-0.01 (-0.10)	0.99	-0.02 (-0.20)	0.98
Lag of Unemployment Rate	0.05 (0.52)	1.06	0.04 (0.41)	1.04
Second Lag of Unemployment Rate	0.07 (0.86)	1.07	0.05 (0.60)	1.05
California Welfare Reform (94,95,96)	-0.24 (-0.49)	0.78	-0.25 (-0.51)	0.78
Massachusetts Welfare Reform (95,96)	0.20 (0.25)	1.22	0.19 (0.23)	1.21
Michigan Welfare Reform (95,96)	-0.20 (-0.28)	0.82	-0.28 (-0.39)	0.76
Wisconsin Welfare Reform (94,95,96)	-0.39 (-0.66)	0.67	-0.42 (-0.71)	0.66
Year Interactions				
Children in Family * 1991	N/A	N/A	0.18 (0.29)	1.20
Children in Family * 1992	N/A	N/A	0.52 (0.88)	1.68
Children in Family * 1993	N/A	N/A	0.45 (0.78)	1.58
Children in Family * 1994	N/A	N/A	0.65 (1.13)	1.91
Children in Family * 1995	N/A	N/A	0.76 (1.31)	2.14
Children in Family * 1996	N/A	N/A	0.27 (0.44)	1.32
N	120,214	N/A	120,214	N/A
Applications	440	N/A	440	N/A
Log Likelihood	-2,635.18	N/A	-2,632.99	N/A
Likelihood Ratio Test Statistic[241] (vs. Model 1)	N/A		4.38	
Degrees of Freedom	N/A		6	

Duration and Panel Effects

As with women, we find no statistically significant evidence of a shift in the hazard rates with duration. While for women there appeared to be a trend toward higher hazard rates with duration, this is less evident for men. The coefficients of the 1990, 1991, and 1992 panel variables for men are all very close to zero, whereas the female coefficients were all negative and one (1992)

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[241] The 5 percent critical value for this statistic, which has a chi-square distribution with six degrees of freedom if all the year interaction coefficients are zero for the population, is 12.6.

was marginally significant. Thus, the slim evidence of lower hazard rates for the first three panels relative to the 1993 panel that was found for women is absent for men.

Respondent Characteristics Observed in the First SIPP Interview

Some of the coefficients for characteristics observed in the first SIPP interview are substantially different for men than women, although many are also quite similar. The latter include the coefficients for the education, disability, and health variables.

Findings for ethnicity and race are quite different for men and women. The Hispanic ethnicity coefficient is small and insignificant for men, but negative and significant for women, while the coefficient for the black race variable is positive and significant for men but small and insignificant for women. The point estimate implies the application odds ratio for black males is estimated to be 143 percent of that for non-black males, other things constant.

The coefficients of the variables that measure family status are also quite different for men and women. The coefficient of the dummy variable for married is negative and quite significant for men, while small and insignificant for women. The application odds ratio for a married man is estimated to be only 70 percent of that for a never married man, other things constant. The divorce/widowed coefficient for men is larger and more significant than the corresponding coefficient for women. The application odds ratio for a divorced/widowed man is estimated to be 149 percent of that for a never married man, other things constant. While children in family has a significant negative coefficient for women, its coefficient is small and insignificant for men.

There are also substantial differences in the coefficients of the program participation variables for young men and young women. First, both the current and past AFDC participation coefficients have enormous standard errors in the male equations, no doubt reflecting very high collinearity between these variables, which is due to very low AFDC participation rates for young men. The Food Stamp coefficients also seem quite different, but note that the sum of the coefficients on current and past Food Stamp participation, which is the estimate of the effect of current participation, is almost identical for men and women.

There are also differences in the income coefficients for young men and young women. Family income has a very small and insignificant coefficient for men, but is negative and quite significant for women. Findings for the personal income coefficients are nearly the opposite, however: a negative and significant coefficient for men, and a negative but insignificant coefficient for women.

Effects of State-level Factors

As with the model for young women, there is considerable variation in the estimated state fixed effects. We do not, however, find a regional pattern in our estimates of the state fixed effects.[242]

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[242] We do not report the individual state fixed effects. We did not test the hypothesis that all state effects are zero. None were significantly different than for the omitted state, West Virginia, but in this model West Virginia's intercept happened to be close to the middle of the intercepts for all states.

With one exception, the coefficients of the state program and economic variables are all statistically insignificant, as they all were for women. The exception is the coefficient of the lagged value of the GA cut variable which is significant and positive. The fact that the lagged coefficient is positive and significant while the current one is not may reflect the miscoding of the GA variable for Michigan, mentioned previously. The lagged coefficient implies that the odds ratio for a respondent in a state that cuts its GA program by one participant per 10,000 population increases by seven percent in the year after the cut. Michigan reduced its GA caseload by over 15 participants per 10,000 population in 1991. Application of this coefficient to Michigan's cut implies an increase in the odds ratio of 185 percent.[243]

As with young women, all of the coefficients for the specific state welfare reform dummy variables are statistically insignificant. Positive differences between the female and male coefficients might also be indicative of an impact of welfare reform, because impacts are expected to be larger for women. Comparison of the values of the coefficients for men and women reveals no regular pattern.

Time Interactions

The coefficients of the interactions between the children in family dummy and the year dummies for 1991 to 1996 are all positive, although none are statistically significant individually. We also cannot reject the null hypothesis that all of the population coefficients for these interactions are zero at the five percent significance level, but we can reject it at the ten percent level – a somewhat stronger result than we obtained for women. The coefficients themselves are very similar to those for young women, and add strength to our earlier tentative conclusion that there was positive shift in the application hazard rate for parents during the period. The fact that the estimated coefficients are essentially the same for men and women suggests that this shift was driven by factors other than AFDC reforms, perhaps *Zebley* spillover effects, administrative changes in SSI, and various outreach efforts.

As with women, we also found that the coefficient of children in family, by itself, is smaller in Model 3 than in Model 1, although neither coefficient is statistically significant. The apparent reason, again, is that the coefficients in Model 1 represent seven-year averages of the annual coefficients for this variable, which are less negative after 1990 than in 1991.

Allowances

We used data for 33,062 SIPP respondents in estimating the allowance models for young men (***Exhibit 5.15***), of whom 235 received first SSI allowances after they were first observed in SIPP and before August 1996. There are 114,725 person-year observations.

As with women, many of the coefficients in the men's allowance models are similar to the corresponding coefficients in the men's application models. As before, we interpret identical coefficients for an explanatory variable in the two models as meaning that the variable is unrelated to the allowance rate, holding the other explanatory variables constant. The following discussion focuses on variables whose coefficients are substantially different for men in the two

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[243] We have not tried to compare the magnitude of this estimated effect to the various estimates for Michigan presented in Chapter I because of the coding error.

models for men, and also compares implied effects on allowance rates for those obtained for women.

Duration and Panel Effects

The duration and panel effect findings are very similar to those for women. As in the application models, we find no statistically significant shifts of the allowance hazard rate with duration or across SIPP panels. The pattern of duration coefficients suggests an initial increase in the allowance hazard with duration through the fourth year, then a decline. In combination with the pattern of duration coefficients in the application equation, this suggests that allowance rates follow a similar pattern. This may reflect time, rather than duration effects, but it is not possible to tell.

Respondent Characteristics Observed in the First SIPP Interview

As in the results for young women, most of the allowance coefficients for the characteristics observed at the first SIPP interview are quite similar to the corresponding coefficients from the application model. The coefficients for the disability and health variables are again an important exception. Comparing the coefficients from the two equations shows that severe disability and poor health both increase the estimated probability of an allowance. The odds of a first allowance for a person with a severe disability are 3.8 times those for a person without a severe disability, holding other things constant. By comparison, the odds of applying for a person with a disability are just 2.8 times greater than the odds of applying for a person without a severe disability. Similarly, the odds of an allowance for a person who reports a severe disability and poor health are 42 times those for a person who reports no disability and is in very good or excellent health. [244] The corresponding figure for applications is 20.

For women, we found that current receipt of AFDC benefits reduces the allowance hazard, holding past receipt (and other factors) constant, whereas past receipt of AFDC benefits, in the absence of current receipt, has about the same effect on allowances as on benefits. We do not replicate this finding for men, but this is due to the relatively small number of cases in our sample and the collinearity between past and current receipt.

For women, we found that the coefficients of all of the family status variables were quite similar in the two equations. This is also true for men, with the exception of the coefficient for divorced/widowed. The coefficient is large and significant in the application equation, but small and insignificant in the allowance equation, implying that allowance rates for young male applicants who are divorced or widowed are lower than for those who were never married.

For women, we found that both family income and personal earnings are associated with lower allowance rates, while personal income is associated with higher allowance rates. We speculated that the latter might be because unearned personal income includes other disability benefits (including workers' compensation and DI), in many cases. For men, the coefficients of all three of these variables are quite similar in the two equations. We do not have an explanation for the apparent differences in the effects of these variables on allowance rates for young women and young men.

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[244] The relative odds were calculated by exponentiating the sum of the coefficients from the severe disability, any disability, and poor health variables.

Exhibit 5.15
Hazard Model Estimates for Young Men: First Allowances.[245]

Explanatory Variable	Model 1: Base Specification		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
Duration and Panel Variables				
Duration Hazards				
Period 1	-17.92	0.93	-13.03	1.05
Period 2	-17.64	1.24	-12.78	1.35
Period 3	-17.59	1.30	-12.78	1.35
Period 4	-17.69	1.17	-12.95	1.13
Period 5	-17.32	1.70	-12.58	1.65
Period 6	-17.32	1.70	-12.70	1.47
Period 7	-17.85	0.00	-13.08	0.00
1990 SIPP panel member	0.15 (0.34)	1.17	0.30 (0.72)	1.35
1991 SIPP panel member	0.00 (0.00)	1.00	0.12 (0.35)	1.12
1992 SIPP panel member	0.06 (0.22)	1.06	0.14 (0.53)	1.15
SIPP Variables				
Age as of January 1993	0.05* (4.17)	1.05	0.05* (4.17)	1.05
Hispanic	0.17 (0.86)	1.19	0.16 (0.81)	1.17
Black	0.31* (1.68)	1.36	0.29 (1.58)	1.34
No High School Diploma	0.87* (2.40)	2.40	0.88* (2.43)	2.41
High School Diploma Only	0.66* (1.83)	1.94	0.67* (1.86)	1.96
Some College	0.74* (1.97)	2.10	0.75* (2.00)	2.11
Student	-0.34 (-1.45)	0.71	-0.34 (-1.45)	0.71
Has a Severe Disability	1.34* (6.44)	3.83	1.35* (6.49)	3.85
Has a Disability	0.92* (3.83)	2.50	0.92* (3.83)	2.51
Missing Information on Disability	1.15* (5.50)	3.16	1.15* (5.50)	3.16
Reports to be in Good Health	0.83* (4.21)	2.30	0.83* (4.21)	2.29
Reports to be in Fair Health	1.21* (4.90)	3.36	1.21* (4.88)	3.35
Reports to be in Poor Health	1.47* (4.71)	4.35	1.46* (4.68)	4.31

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[245] For more information on the variables, see ***Exhibit 5.10***. Values in parentheses are t-statistics. An asterisk (*) indicates significance at the 10 percent level or better, using a two-tailed test.

Exhibit 5.15 (continued)
Hazard Model Estimates for Young Men: First Allowances

Explanatory Variable	Model 1: Base Specification		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
SIPP Variables (continued)				
Married	-0.44* (-1.68)	0.65	-0.44* (-1.67)	0.65
Divorced/Widow	0.17 (0.85)	1.19	0.18 (0.90)	1.20
Children in Family	-0.31 (-1.21)	0.74	0.11 (0.21)	1.12
Age of Youngest Child	-0.41 (-0.55)	0.66	-0.39 (-0.52)	0.68
Other Adult in the Family	-0.09 (-0.47)	0.91	-0.08 (-0.42)	0.92
Receives AFDC	21.45 (0.00)	-----	21.39 (0.00)	-----
Received AFDC in Previous Periods	-21.22 (0.00)	0.00	-21.19 (0.00)	0.00
Receives Food Stamps	0.50* (1.88)	1.64	0.51* (1.92)	1.67
Received Food Stamps in Previous Periods	0.52* (2.35)	1.68	0.52* (2.35)	1.68
Family Income as a Percent of Poverty	0.01 (0.11)	1.01	0.01 (0.11)	1.01
Personal Earnings (x 1,000)	0.00 (0.00)	1.00	-0.01 (-0.04)	0.99
Personal Income (x 1,000)	-0.71* (-2.80)	0.49	-0.70* (-2.77)	0.50
State Fixed Effects	Y		Y	
State Program and Economic Variables				
GA Cuts Per Capita	-0.06 (-1.20)	0.94	-0.07 (-1.37)	0.94
Lag of GA Cuts Per Capita	0.03 (0.71)	1.03	0.02 (0.47)	1.02
SSI Benefit Amount	0.02 (1.33)	1.02	0.00 (0.00)	1.00
Maximum Monthly AFDC Benefit	-0.01 (-0.91)	0.99	0.00 (0.00)	1.00
Average Tax and Benefit Reduction Rate	4.02 (1.57)	55.66	3.13 (1.22)	22.96
Unemployment Rate	0.13 (1.02)	1.14	0.22* (1.75)	1.24

Exhibit 5.15 (continued)
Hazard Model Estimates for Young Men: First Allowances

Explanatory Variable	Model 1: Base Specification		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
State Program and Economic Variables (continued)				
Lag of Unemployment Rate	-0.09 (-0.70)	0.91	-0.11 (-0.85)	0.89
Second Lag of Unemployment Rate	0.11 (1.02)	1.12	0.10 (0.92)	1.10
California Welfare Reform (94,95,96)	0.86 (1.15)	2.37	-0.09 (-0.17)	0.92
Massachusetts Welfare Reform (95,96)	1.05 (1.22)	2.85	1.18 (1.37)	3.26
Michigan Welfare Reform (95,96)	-20.72 (0.00)	0.00	-20.76 (0.00)	0.00
Wisconsin Welfare Reform (94,95,96)	0.47 (0.33)	1.59	0.23 (0.16)	1.26
Year Interactions				
Children in Family * 1991	N/A	N/A	-0.87 (-1.35)	0.42
Children in Family * 1992	N/A	N/A	-1.31* (-1.96)	0.27
Children in Family * 1993	N/A	N/A	-0.29 (-0.52)	0.75
Children in Family * 1994	N/A	N/A	-0.41 (-0.71)	0.66
Children in Family * 1995	N/A	N/A	0.22 (0.39)	1.25
Children in Family * 1996	N/A	N/A	-0.71 (-1.02)	0.49
N	114,725	N/A	114,725	N/A
Allowances	235	N/A	235	N/A
Log Likelihood	-1,420.158	N/A	-1,414.15	N/A
Likelihood Ratio Test Statistic[246] (vs. Model 1)	N/A		12.02	
Degrees of Freedom	N/A		6	

Effects of State-Level Factors

We find the same general pattern of estimates in the state fixed effects as for the allowance model as in the applicant models, though there are some exceptions.[247] In general, we find that the range of coefficients is very similar to that in the application model for men.[248]

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[246] The 5 percent critical value for this statistic, which has a chi-square distribution with six degrees of freedom if all the year interaction coefficients are zero for the population, is 12.6.

As with women, we find that the coefficients of the state-level economic and program factors are all insignificant in the allowance equation. This includes the coefficient of the first lag of the GA cut variable, which was the only significant coefficient in the application equation for young men. While the smaller coefficient of this variable in the allowance equation implies a negative effect on the allowance rate, the difference between the coefficients in the two equations is not statistically significant.[249]

Time Interactions

The comparison of the coefficients of interactions between the children in family dummy and the year dummies for 1991 to 1996 in the application and allowance equations for young men is quite different than the comparison for young women – despite the fact that the coefficients of the interactions in the application equations are quite similar for young men and young women. For young women, we found positive, sometimes significant coefficients in the allowance equations, and an implied upward shift in the allowance rate for women living with own children relative to other young women during the period.

For men, we find mostly negative, insignificant coefficients in the allowance rate equation, but a significant negative coefficient for the 1992 interaction and a positive but insignificant coefficient for the 1995 interaction. The apparent upward shift in the application hazards for both young women and young men living with their own children relative to other young women and young men were apparently accompanied by an upward shift in the allowance rate for young women living with their own children but a downward shift in the allowance rate for young men living with their own children. We do not have an explanation for this finding.

C. Specifications for Children

There are several similarities between the child and adult specifications. We also use the discrete time logit model to estimate SSI application and allowance hazard rates. The sample for the application models consists of all SIPP children who had never filed an application prior to their first SIPP interview and, for the allowance models, children who never received SSI prior to their first interview. A small number of children who lived in certain states were excluded for the same reasons as described above for adults.[250] The dependent variables are constructed in a fashion identical to those in the adult models.

The one major difference is in the set of explanatory variables used for the child estimates. While we continue to use all of the same duration, panel, and state variables as in the adult models, our

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[247] We do not report the individual state fixed effects. Certain states that have positive coefficients in the applicant model, such as California, have large negative coefficients in the allowance models. We found a similar type of variation in coefficient estimates for California in the models for women.

[248] The overall range is larger in the applicants model, but if the top and bottom outliers are excluded from both models, the range of coefficients is very similar.

[249] The Michigan welfare reform dummy has an enormous standard error. This likely reflects a very small number of allowances to young male SIPP respondents from Michigan in this period.

[250] For both the application and allowance models, children living in the nine grouped states were excluded (Maine, Vermont, Iowa, North Dakota, South Dakota, Alaska, Idaho, Montana, and Wyoming). In addition, children from West Virginia were excluded from the application models and children from West Virginia, Hawaii, New Mexico, and Utah were excluded from the allowance models.

set of SIPP variables is slightly different. We first include the following individual/family variables: sex, age, child disability status, family type, AFDC participation, Food Stamp participation, family income as a percent of poverty, and other children in family.[251] With the exception of sex, family type, and the "other children in family" variable, all of these variables appeared in the adult specifications. We also include a number of characteristics of the child's mother and/or father. These variables include the following characteristics of both the mother and father: age, race, education, and disability status (see *Exhibit 5.16*.).[252]

Exhibit 5.16
Description of SIPP Variables for Child Application and Allowance Models

Individual Variables	Description
Female	A dummy variable equal to one if the child is female, zero otherwise.
Age	Age is adjusted in every panel to reflect the child's age as of January 1990.
Disability Status: Child has a disability	A dummy variable equal to one if the child is reported to have a disability, zero otherwise.[253]
Child disability information missing	A dummy variable equal to one if the child is missing information on disability, zero otherwise.
Family Type: Child Lives with Mother Only	A dummy variable equal to one if the child lives with only his or her mother, zero otherwise.
Child Lives with Both Parents	A dummy variable equal to one if the child lives with his or her mother and father, zero otherwise.
AFDC Participation	A dummy variable equal to one if the child is from a family that receives AFDC benefits, zero otherwise.
Food Stamp Participation	A dummy variable equal to one if the child is from a family that receives Food Stamps, zero otherwise.
Family Income as a percent of poverty	Equal to the family's January income of the panel year as a percent of poverty.
Other Children in the Family	A dummy variable equal to one if there is another child in the family, zero otherwise.
Parent Variables	**Description**
Mother's/Father's Age	Age is adjusted in every panel to reflect the respective parent's age as of January 1990. The respective variable is defined as zero for children living in a family without their mother or father.
Parent's Race/Ethnicity: Mother/ Father is Hispanic	A dummy variable equal to one for a child whose mother/ father reports Hispanic ethnicity, zero otherwise.
Mother/ Father is Black	A dummy variable equaling one for a child whose mother/father is black (non-Hispanic), zero otherwise. (The omitted category is white)

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[251] We include dummy variables for mother-only and two parent families (the excluded category is father only families). The other children in the family variable equals one if there is another child under age 18 in the family unit, and zero otherwise.

[252] In cases where there is an absent parent, the absent parent's information is assigned a value of zero.

[253] There are two definitions of disabilities used based on the age of the child. For those under age six, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the usual kind of activities by most children their age. For those age six and over, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the ability to do regular school work.

Exhibit 5.16 (continued)
Description of SIPP Variables for Child Application and Allowance Models

Parent Variables	Description
Parent's Education:	
Mother/Father has no high school diploma	A dummy variable equaling one for a child whose mother/father is an individual with no high school diploma, zero otherwise.
Mother/Father has high school diploma only	A dummy variable equaling one for a child whose mother/father is an individual with only a high school diploma, zero otherwise.
Mother/Father has some college education.	A dummy variable equaling one for an individual with some college education, zero otherwise.[254]
Parent's Disability Status:	
Mother/Father Has a Severe Disability	A dummy variable equaling one for a child whose mother/father is severely disabled, zero otherwise.
Mother/Father Has a Disability	A dummy variable equaling one for a child whose mother/father is disabled, but not severely so, zero otherwise.[255]
Mother/Father disability information missing	A dummy variable equaling one for a child whose mother/father is missing disability information due to sample attrition, zero otherwise.[256]

We present estimates for two sets of application and allowance models. The first set includes duration and panel variables, SIPP variables, and state variables. The second set includes all of the same variables plus a set of year dummies that are interacted with an AFDC participation probability variable. Similar to the adult AFDC models, we estimate a linear probability model of AFDC participation to generate AFDC participation probabilities. The dependent variable in this model is equal to one if the child lives in a family that receives AFDC during the first SIPP interview, and zero otherwise. The explanatory variables are a subset of variables from the application and allowance models. The results from the linear probability model for children are presented in *Appendix Exhibit E.12*.

D. Results from Child SSI Application and Allowance Models

1. Applications

We used data for 53,652 SIPP children in estimating the application models (*Exhibit 5.17*), of whom 1,103 applied for SSI after they were first observed in SIPP and before August 1996. There are 231,908 person-year observations. Our discussion focuses on the coefficients for the first of the two models estimated (Model 1), though most of the coefficients of these variables are stable across both models.

Duration and Panel Effects

Unlike adults, we find statistically significant shifts in the application hazard rate with duration for children. All of the duration hazards are negative and the magnitudes of coefficients

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[254] The omitted education status category includes those who have received at least a college diploma.

[255] Includes individuals who report a limitation in kind or amount of work or housework they can do; has difficulty with any of the functional activities or ADLs; uses a wheelchair; has used a cane, crutches, or walker for more than six months; has a disabling mental or emotional condition.

[256] The omitted disability status category includes children whose mother/father reported that they had no disability.

gradually increase with each duration period, with the exception of the last period.[257]   We also find that there were statistically significant shifts in the hazard rates for each of the panels, though the magnitude of the coefficients did not follow an increasing or decreasing pattern over time. Relative to the 1993 SIPP panel, the hazard rates are higher for the 1990 SIPP panel, but lower for the 1991 and 1992 SIPP panels.

The coefficients from the duration and panel hazards were likely influenced by the changes in policy for SSI children in the early nineties. Interpreting the individual duration and panel coefficients is difficult, however, because calendar years correspond to different durations for each SIPP panel member (e.g., calendar year 1991 represents the second duration in the 1990 panel and the first duration in the 1991 panel). To better understand the findings, we plot the intercepts for each panel by calendar year (see ***Exhibit 5.18***).[258] The plot shows a major parallel shift in the hazard from the 1990 to the 1991 panel, with no further shift thereafter. This is not surprising because children in the 1990 panel were "at-risk" for applying for SSI before the major changes took place in the child SSI reforms. Oversampling of the low-income population in the 1990 SIPP might also contribute to this shift. It is likely that this specification for children could be improved by including a separate set of duration terms for each panel.

Characteristics of Parents and Children Observed in the First SIPP Interview.

We have two sets of coefficients for our SIPP variables. The first is for individual/family level characteristics. The coefficients on the variables for female, age, family income as a percent of poverty, and lives with mother and father are negative and significant. The coefficients for any disability, missing disability information, other child in the family, present Food Stamp recipients, and lives with mother-only are positive and significant. We do not find a significant coefficient for the AFDC recipiency variable. We do find, however, that the coefficient for a mother-only family is very large. Hazard rates for children who lived in a mother-only family are 3.3 times those for children who lived with only their father and 4.5 times as large for those who lived with both parents.[259]

Somewhat surprisingly, the largest coefficient is for the presence of another child in the family. The odds ratio for children who lived with another child in the family were almost 17 times those for children who had no siblings living with them. This represents an increase in the overall probability of application from 0.5 percent to 8 percent, holding other factors constant at their means.

The coefficient of child disability is also large. The odds of applying for a child with a disability were 4.9 times those for a child without a disability. Similar to adults, it is interesting to note that the coefficient on the missing disability variable was also positive and significant, indicating

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[257] In statistical tests not shown in the exhibit, we find that there was a statistically significant shift in the hazard in each of the first four periods relative to the seventh period.

[258] The only panel that experienced a small drop-off in the hazard rate from one year to the next was the 1990 panel, in which the hazard fell from 1995 to 1996.

[259] The odds ratio comparison between mother-only and two parent families was calculated by taking the exponentiated difference between the coefficients between the mother-only and both parents variable.

that attrition from SIPP is greater for child SSI applicants than non-applicants, holding other factors constant.[260]

Our second set of coefficients is for characteristics of the child's parents. We find that several of the coefficients on the mother and father variables are statistically significant. In general, all of the parent's coefficients have the expected sign and are relatively small. For the mother's characteristics, we find positive and statistically significant coefficients on the variables for black, no high school diploma, and severe disability. We find a negative and statistically significant coefficient for age. For the father's characteristics, we find positive and statistically significant coefficients on the variables for age, black, and each level of schooling below college completion.

Effects of State-Level Factors

Similar to our findings for women, we find that odds of applying are generally higher in states in southern regions relative to those in other regions. [261] Of the 15 states with the highest fixed effects, 13 are southern. The odds of applying were highest in Kentucky and Mississippi, other things constant. This provides some evidence that some of the outreach efforts in states that effected children during the pre-reform period may have also had an impact on women.

Unlike the adult models, we find that several of the state program and economic variables are statistically significant. One reason for this result is that our sample of child applicants is much larger (1,103 child applicants vs. 545 young women applicants). The sign of this coefficient is difficult to explain. We also find a positive and statistically significant effect for ATBRR, the lag of the unemployment rate, and the second lag of the unemployment rate. Similar to the adult models, we find that the coefficient on ATBRR is quite large. Again, we suspect that the large coefficient reflects high collinearity with the duration and panel dummies. Further, because the timing of the major federal changes in SSI child policy coincided with large changes in the ATBRR, we suspect that the ATBRR variable is capturing some of this variation. To a lesser extent, the timing of the SSI policy changes may also influence the coefficient estimates for the lag of GA enrollment, lag of the unemployment rate, and second lag of the unemployment rates, though there is considerably more cross-state variation in changes in these variables.[262]

Similar to our adult application models, none of the coefficients for the specific state welfare reform dummy variables is significant, and all four are negative. While the sample sizes are larger for the child estimates, the individual sample samples for states in these time periods is likely still too small to capture any policy effects.

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[260] This finding has important implications for use of the Survey and Program Dynamics for studying transitions to SSI. We return to this in the next chapter.

[261] We do not report the individual state fixed effects. The omitted states is West Virginia.

[262] The error in the GA variable for Michigan might affect this coefficient, but most GA recipients are adults without children, so we would not expect to find a GA effect.

Time Interactions

In Model 2 (***Exhibit 5.17***), we include the AFDC participation probability interacted with six-year dummies for 1991 to 1996. We find that the interactions for 1992 through 1995 had positive coefficients, whereas the 1991 and 1996 interactions had negative coefficients. Based on log-likelihood ratio tests, we conclude that the set of coefficients is significant. Individually, all of the coefficients are statistically insignificant at the 5 percent level and only the 1994 interaction variable is significant at the 10 percent level. These coefficients provide evidence of a positive shift in the application odds for AFDC children relative to other children in low income families after 1991, but by 1996 the application odds for AFDC children relative to other children in low income families was below its 1990 level. The relative increase in the middle period could be a consequence of *Zebley*, but the decline at the end is more difficult to explain.

We find that the patterns of the AFDC participation probability interaction terms are similar to the patterns found in the application models for young adult women. The coefficients gradually increase in each year through 1994, and then decline through 1996. At its peak in 1994, the odds-ratio is 3.3. This implies that the application odds ratio of a child with an AFDC probability of 1.0 was 3.3 times larger in 1994 than in 1990, holding other factors constant. Thus, we observe a substantial shift in the hazard for high probability AFDC children relative to low probability AFDC children in the years following the *Zebley* decision.

The inclusion of the interaction terms has a small effect on the estimated coefficients for the duration and panel variables. In general, the magnitude of all of the duration variables becomes more negative and the duration for the fifth period becomes significant. In contrast, the estimated coefficients on the panel variables become more positive and all of the coefficients remain significant. It appears to be important to include annual variables in the child models to capture the effects of the changes in the child SSI program in the early nineties.

2. Allowances

We use data for 53,652 SIPP children from low-income families in estimating the allowance models (***Exhibit 5.19***), of whom 510 received their first SSI allowance after they were first observed in SIPP and before August 1996. There are 227,949 person-year observations for the analysis.

As in our adult models, many of the coefficients in the child allowance models are similar to their corresponding coefficients in the application models. Hence, the following discussion focuses on variables whose coefficients are different in the two models.

Exhibit 5.17
Hazard Model Estimates for Children: First Applications[263]

Explanatory Variable	Model 1: Base Specification		Model 2:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
Duration and Panel Variables				
Duration Hazards				
Period 1	-16.93	0.24	-13.64	0.23
Period 2	-16.56	0.35	-13.32	0.31
Period 3	-16.34	0.44	-13.17	0.36
Period 4	-16.25	0.48	-13.06	0.41
Period 5	-15.86	0.71	-12.70	0.58
Period 6	-15.34	1.19	-12.21	0.95
Period 7	-15.51	0.00	-12.16	0.00
1990 SIPP panel member	1.15* (5.23)	3.17	1.25* (4.81)	3.48
1991 SIPP panel member	-0.45* (-2.65)	0.64	-0.36* (-1.89)	0.69
1992 SIPP panel member	-0.29* (-2.64)	0.75	-0.24* (-2.00)	0.78
SIPP Variables				
Female	-0.47* (-7.83)	0.63	-0.47* (-7.83)	0.63
Age as of January 1993	-0.02* (-2.23)	0.98	-0.01 (-1.45)	0.99
Receives AFDC	0.07 (0.78)	1.07	0.07 (0.78)	1.07
Receives Food Stamps	0.40* (4.44)	1.50	0.40* (4.44)	1.50
Family Income as a Percent of Poverty	-0.22* (-4.40)	0.80	-0.22* (-4.40)	0.80
Other Child in the Family	2.82* (25.64)	16.82	2.84* (25.82)	17.17
Has a Disability	1.59* (19.88)	4.92	1.58* (19.75)	4.87
Missing Information on Disability	0.30* (2.31)	1.34	0.30* (2.31)	1.35
Father's Age	0.01* (2.08)	1.01	0.01* (2.06)	1.01
Father is Black	0.38* (2.71)	1.46	0.45* (2.81)	1.57
Father is Hispanic	0.00 (0.01)	1.00	0.14 (0.64)	1.15
Father has No High School Diploma	0.56* (2.67)	1.74	0.58* (2.76)	1.78
Father has High School Diploma Only	0.49* (2.45)	1.63	0.51* (2.55)	1.66

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[263] For more information on the variables, see *Exhibit 5.16*. Values in parentheses are t-statistics. An asterisk (*) indicates significance at the 10 percent level or better, using a two-tailed test.

Exhibit 5.17 (continued)
Hazard Model Estimates for Children: First Applications

Explanatory Variable	Model 1: Base Specification		Model 2:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
SIPP Variables (continued)				
Father has Some College Education	0.19 (0.83)	1.21	0.21 (0.91)	1.23
Father has a Severe Disability	0.13 (0.93)	1.14	0.08 (0.53)	1.08
Father has a Disability	0.20 (1.05)	1.22	0.19 (1.00)	1.21
Father Disability Information Missing	-0.11 (-0.75)	0.89	-0.12 (-0.89)	0.89
Mother's Age	-0.01* (-1.00)	0.99	-0.01* (-1.00)	0.99
Mother is Black	0.34* (3.4)	1.41	0.23* (1.64)	1.26
Mother is Hispanic	0.09 (0.75)	1.10	-0.03 (-0.19)	0.97
Mother has No High School Diploma	0.55* (2.75)	1.74	0.43* (1.87)	1.53
Mother has High School Diploma Only	0.29 (1.53)	1.33	0.24 (1.20)	1.27
Mother has Some College Education	0.23 (1.15)	1.26	0.21 (1.05)	1.23
Mother has a Severe Disability	0.50* (5.56)	1.65	0.44* (4.40)	1.56
Mother has a Disability	0.03 (0.28)	1.03	0.01 (0.07)	1.01
Mother Disability Information Missing	0.12 (0.80)	1.12	0.11 (0.73)	1.11
Lives with Mother Only	1.21* (2.28)	3.34	1.18* (2.23)	3.24
Lives with Mother and Father	-0.30 (-0.91)	0.74	-0.19 (-0.54)	0.83
State Fixed Effects	Y		Y	
State Program and Economic Variables				
Maximum Monthly AFDC Benefit	0.01 (1.00)	1.01	0.00 (0.00)	1.00
GA Cuts Per Capita	-0.01 (-0.33)	0.99	0.00 (0.00)	1.00
Lag of GA Cuts Per Capita	-0.05* (-2.50)	0.96	-0.04* (-2.00)	0.96
SSI Benefit Amount	0.00 (0.00)	1.00	0.00 (0.00)	1.00
Average Tax and Benefit Reduction Rate	3.72* (3.10)	41.12	3.64* (2.66)	38.13
Unemployment Rate	-0.01 (-0.17)	0.99	-0.01 (-0.14)	0.99
Lag of Unemployment Rate	0.14* (2.33)	1.15	0.08 (1.33)	1.08

Exhibit 5.17 (continued)
Hazard Model Estimates for Children: First Applications

Explanatory Variable	Model 1: Base Specification		Model 2:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
State Program and Economic Variables (Continued)				
Second Lag of Unemployment Rate	0.19* (3.80)	1.21	0.12* (2.40)	1.12
California Welfare Reform (94,95,96)	-0.22 (-0.58)	0.80	-0.22 (-0.58)	0.80
Massachusetts Welfare Reform (95,96)	-18.91 (0.00)	0.00	-18.92 (0.00)	0.00
Michigan Welfare Reform (95,96)	-0.01 (-0.03)	0.99	-0.26 (-0.68)	0.77
Wisconsin Welfare Reform (94,95,96)	-0.07 (-0.14)	0.93	-0.20 (-0.40)	0.82
Alternative Specifications				
Probability of AFDC Receipt * 1991	N/A	N/A	-0.07 (-0.10)	0.93
Probability of AFDC Receipt * 1992	N/A	N/A	0.66 (0.92)	1.94
Probability of AFDC Receipt * 1993	N/A	N/A	1.05 (1.46)	2.86
Probability of AFDC Receipt * 1994	N/A	N/A	1.20* (1.64)	3.33
Probability of AFDC Receipt * 1995	N/A	N/A	1.08 (1.46)	2.93
Probability of AFDC Receipt * 1996	N/A	N/A	-0.77 (-0.92)	0.46
N	231,908	N/A	231,908	N/A
Applications	1,103	N/A	1,103	N/A
Log Likelihood	-5,726.53	N/A	-5,713.67	N/A
Likelihood Ratio Test Statistic[264] (vs. Model 1)	N/A		25.72	
Degrees of Freedom	N/A		6	

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[264] The 5 percent critical value for this statistic, which has a chi-square distribution with six degrees of freedom if all the year interaction coefficients are zero for the population, is 12.6.

Exhibit 5.18
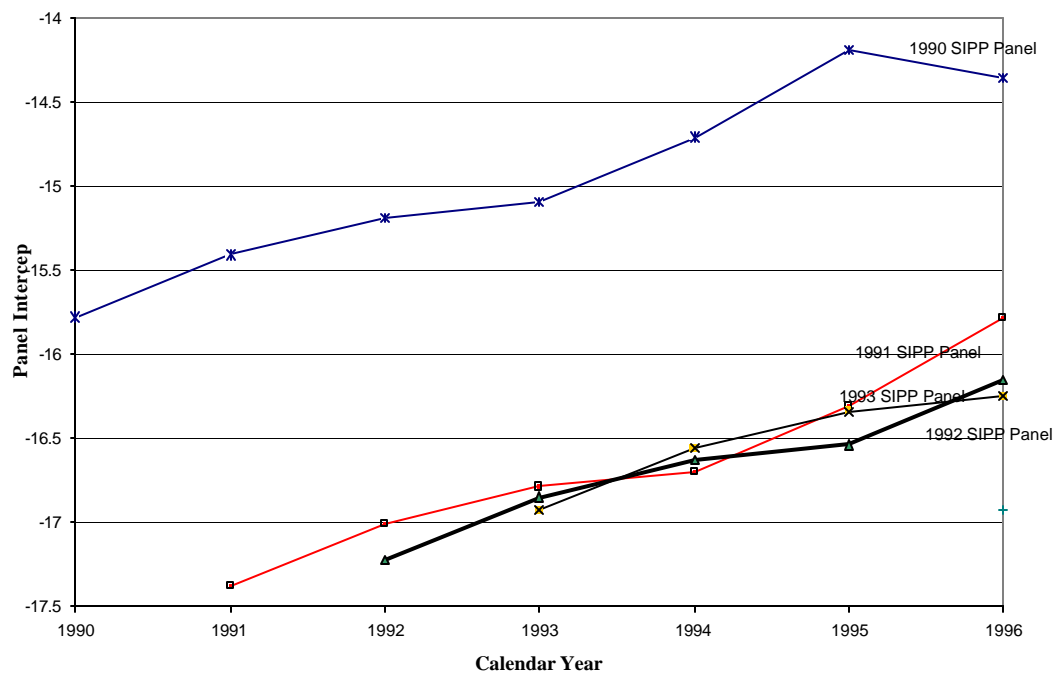**Child Application Panel Intercepts by Calendar Year Allowances**

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Exhibit 5.19
Hazard Model Estimates for Children: First Allowances[265]

Explanatory Variable	Model 1: Base Specification		Model 2:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
Duration and Panel Variables				
Duration Hazards				
Period 1	-11.90	0.58	-8.06	0.66
Period 2	-11.73	0.69	-7.97	0.72
Period 3	-11.61	0.78	-7.95	0.73
Period 4	-11.72	0.70	-8.09	0.64
Period 5	-11.45	0.91	-7.84	0.82
Period 6	-10.88	1.62	-7.40	1.28
Period 7	-11.36	0.00	-7.64	0.00
1990 SIPP panel member	1.73* (5.97)	5.66	1.93* (5.68)	6.89
1991 SIPP panel member	0.02 (0.09)	1.02	0.16 (0.62)	1.18
1992 SIPP panel member	0.11 (0.65)	1.12	0.17 (0.94)	1.18
SIPP Variables				
Female	-0.38* (-3.80)	0.68	-0.39* (-3.90)	0.68
Age as of January 1993	-0.02* (-2.00)	0.98	-0.02 (-2.00)	0.98
Receives AFDC	0.32* (2.29)	1.38	0.32* (2.29)	1.38
Receives Food Stamps	0.10 (0.67)	1.10	0.10 (0.67)	1.10
Family Income as a Percent of Poverty	-0.19* (-2.71)	0.83	-0.19* (-2.71)	0.83
Other Child in the Family	2.84* (18.93)	17.04	2.85* (19.00)	17.25
Has a Disability	2.39* (21.73)	10.94	2.38* (21.64)	10.82
Missing Information on Disability	0.35* (1.75)	1.41	0.35* (1.75)	1.42
Father's Age	0.02* (2.00)	1.02	0.02* (2.00)	1.02
Father is Black	0.19 (0.86)	1.21	0.30 (1.30)	1.35
Father is Hispanic	0.01 (0.05)	1.01	0.21 (0.70)	1.23
Father has No High School Diploma	0.38 (1.15)	1.46	0.40 (1.21)	1.50
Father has High School Diploma Only	0.58* (1.87)	1.78	0.61* (1.97)	1.83
Father has Some College Education	0.71* (2.15)	2.04	0.73* (2.21)	2.08

[265] For more information see *Exhibit 5.16*.

Exhibit 5.19 (continued)
Hazard Model Estimates for Children: First Allowances

Explanatory Variable	Model 1: Base Specification		Model 2:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
SIPP Variables (continued)				
Father Disability Information Missing	0.40 (-1.25)	1.50	0.40 (-1.36)	1.49
Mother's Age	-0.01 (-1.61)	0.99	-0.01 (-1.57)	0.99
Mother is Black	0.44* (3.14)	1.55	0.28 (0.36)	1.33
Mother is Hispanic	0.38* (2.11)	1.47	0.22 (1.01)	1.24
Mother has No High School Diploma	1.05* (3.18)	2.87	0.88* (2.44)	2.40
Mother has High School Diploma Only	0.67* (2.03)	1.96	0.60* (1.82)	1.83
Mother has Some College Education	0.58* (1.76)	1.79	0.55 (1.62)	1.73
Mother has a Severe Disability	0.32* (2.46)	1.38	0.24* (1.71)	1.27
Mother has a Disability	0.13 (0.65)	1.14	0.10 (0.50)	1.10
Mother Disability Information Missing	-0.11 (-0.48)	0.90	-0.12 (-0.52)	0.89
Lives with Mother Only	0.63 (0.78)	1.88	0.59 (0.73)	1.81
Lives with Mother and Father	-0.89* (-1.68)	0.41	-0.72 (-1.33)	0.49
State Fixed Effects	Y	Y	Y	Y
State Program and Economic Variables				
Maximum Monthly AFDC Benefit	-0.00 (-0.11)	1.00	-0.00 (-0.11)	1.00
GA Cuts Per Capita	-0.01 (-0.25)	0.99	-0.00 (-0.10)	1.00
Lag of GA Cuts Per Capita	-0.05 (-1.67)	0.95	-0.05 (-1.66)	0.95
SSI Benefit Amount	-0.01 (-1.16)	0.99	-0.01 (-1.15)	0.99
Average Tax and Benefit Reduction Rate	5.38* (3.43)	217.17	4.84* (2.78)	126.98
Unemployment Rate	0.10 (1.11)	1.11	0.05 (0.51)	1.05
Lag of Unemployment Rate	-0.06 (-0.67)	0.94	-0.13 (-1.44)	0.87
Second Lag of Unemployment Rate	0.24* (3.00)	1.27	0.21* (2.63)	1.24
California Welfare Reform (94,95,96)	-0.91* (-1.78)	0.40	-0.95* (-1.86)	0.39

Exhibit 5.19 (continued)
Hazard Model Estimates for Children: First Allowances

| Explanatory Variable	Model 1: Base Specification		Model 2:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
State Program and Economic Variables (continued)				
Massachusetts Welfare Reform (95,96)	-18.07 (-0.00)	0.00	-18.13 (-0.00)	0.00
Michigan Welfare Reform (95,96)	0.25 (0.47)	1.28	-0.01 (-0.02)	0.99
Wisconsin Welfare Reform (94,95,96)	0.27 (0.43)	1.31	0.23 (0.36)	1.26
Alternative Specifications				
Probability of AFDC Receipt * 1991	N/A	N/A	0.47 (0.57)	1.60
Probability of AFDC Receipt * 1992	N/A	N/A	1.57* (1.78)	4.79
Probability of AFDC Receipt * 1993	N/A	N/A	1.59* (1.83)	4.89
Probability of AFDC Receipt * 1994	N/A	N/A	0.99 (1.09)	2.70
Probability of AFDC Receipt * 1995	N/A	N/A	1.20 (1.30)	3.33
Probability of AFDC Receipt * 1996	N/A	N/A	-0.71 (-0.62)	0.49
N	227,949	N/A	227,949	N/A
Allowances	510	N/A	510	N/A
Log Likelihood	-2,882.13	N/A	-2875.40	N/A
Likelihood Ratio Test Statistic[266] (vs. Model 1)	N/A		13.46	
Degrees of Freedom	N/A		6	

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[266] The 5 percent critical value for this statistic, which has a chi-square distribution with six degrees of freedom if all the year interaction coefficients are zero for the population, is 12.6.

Duration and Panel Effects

Similar to the application models, we find that the hazard rate gradually increases with duration, with one small exception in the fourth year. There are, however, significant differences in the panel coefficients. In the allowance model, the only panel that showed a significant shift upward in the hazard rate relative to the 1993 panel is the 1990 panel. In comparison to the application model, the coefficients in the allowance model on the 1991 and 1992 panel variables switched signs and became insignificant.

These differences between the application and allowance model coefficients are somewhat misleading. When we plot the intercepts for each SIPP panel by year, they look quite similar to those for the application model (***Exhibit 5.20***). We find that the hazard rates for the 1990 SIPP panel were larger in each year than the hazard rates in the remaining SIPP panels. The main difference is that the slopes of the intercept lines for each panel are smaller in the allowance models than in the application models, indicating a decline in the allowance rate by year.

Exhibit 5.20
Child Allowance Panel Intercepts by Calendar Year
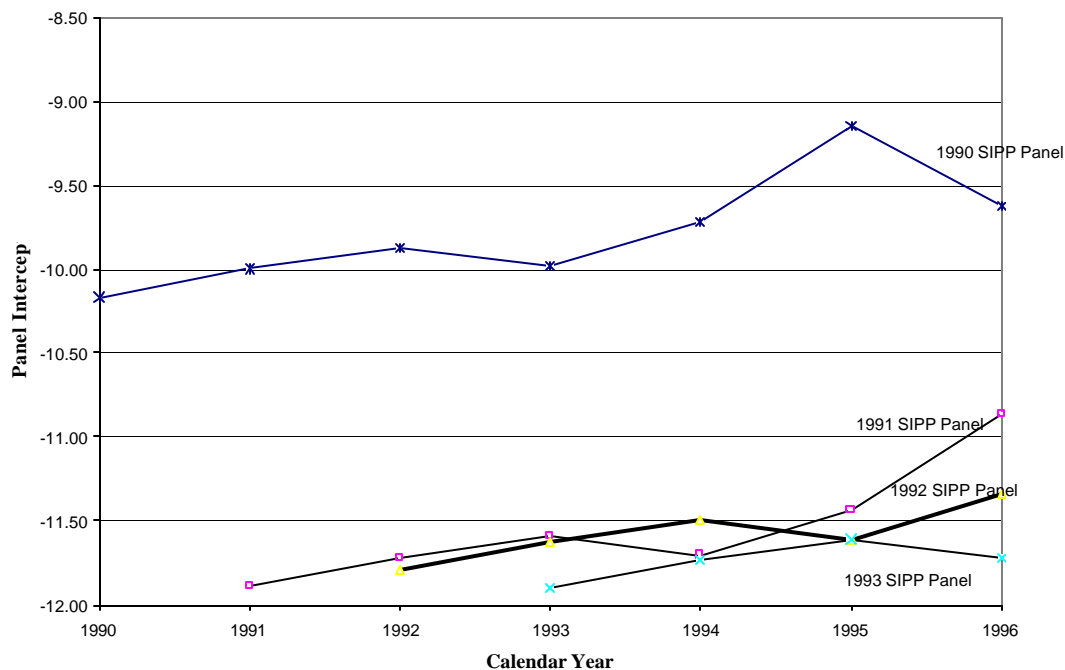
Characteristics of Parents and Children Observed in the First SIPP Interview.

While all of the coefficients on individual/family level characteristics have the same signs in both the application and allowance models, there are some differences in the magnitudes of the estimated coefficients. The biggest difference is in the estimated coefficient for disability. The odds of receiving an allowance for a child with a disability were 10.9 times greater than those of a child without a disability. By comparison, the odds of applying for a child with a disability were only 4.9 times that of a person with a disability. Thus, allowance rates are higher for those applicants identified as having a disability in SIPP. Another notable difference is in the estimated

coefficient for AFDC. In the allowance model, the coefficient is positive and significant, whereas it is positive and insignificant in the application model. The difference between the associated odds ratios though, is relatively small (1.38 for the allowance model vs. 1.07 in the application model).

Similar to the application models, the estimated coefficients in the allowance models on the parent variables are relatively small. The estimated coefficients for a few variables are only significant in the allowance or application model, but not both (e.g., mother is of Hispanic ethnicity). In general though, the differences in the estimated coefficients are relatively small even for those coefficients that differ in significance across models. The largest change is for the "lives with mother only" variable. In the allowance model, the estimated coefficient for those who live in mother-only families is positive and insignificant, whereas in the application model it is positive and significant. There is also a modest difference in the estimates for the odds ratios associated with these coefficients (3.3 for applications vs. 1.8 for allowances).

Effects of State-Level Factors

The pattern of state fixed effects estimates is very similar to that in the child applicant models. Of the 15 states with the highest fixed effects, 11 are southern. In general, the relative odds ratios are also similar across application and allowance models, and are highest for Kentucky and Mississippi.

We find similar patterns of coefficients for the state program and economic variables in the allowance models as in the application models. We find a very large, significant coefficient for the ATBRR variable that we suspect reflects a collinearity problem with the duration and panel dummies as in the adult models. We also find that the second lag of the unemployment rate is positive and significant in both models. The sum of the three unemployment rate coefficients is just slightly smaller than the corresponding sum from the application equation, suggesting that applications induced by a recession are no more nor less likely to be allowed than others.

There are two differences in the estimated coefficients on the state variables in the application and allowance models. First, the estimated coefficient on the lag of the unemployment rate is negative and insignificant in the allowance model, whereas it is positive and significant in the application model. The magnitude of this difference is very small, however, when the point estimates for the odds are compared (0.94 in the allowance models vs. 1.2 in the application models). Second, we find a negative and significant effect for the California welfare reform dummy at the 10 percent level. This result is surprising because we expected that the effect of welfare reform on allowances would be positive. One problem in interpreting the coefficient on this variable, as well as other welfare reform variables, is that we do not explicitly control for the changes in policy associated with *Zebley*. It may be that the effect of *Zebley* is confounded with that of these states' welfare reforms.

Time Interactions

The coefficients of the interactions between the AFDC participation probability and the year dummies in the allowance model are generally larger than the corresponding coefficients in the application model. The coefficients for the interactions in the allowance model are largest in

1992 and 1993, whereas they are largest in the application models in 1994. The pattern of coefficients suggests that the allowance rates for high probability AFDC cases increased relative to those for low probability cases early in the period, but that this increase was not sustained through the end of the period. It is interesting to note that we find this same pattern in the allowance models for young women.

VII. CONCLUSION

A. Descriptive Analyses

The matched SIPP/SSA data provide the opportunity to examine the intersection of the populations served by AFDC and SSI, and how that intersection has changed since the respondents were first observed in SIPP (1990–1993). We have found that samples sizes are large enough to obtain reasonably accurate estimates of recipient characteristics in four adult age/sex groups, plus children, in each of the four SIPP panels that have been matched. If we pool the samples for all four years we can obtain reasonable sample sizes for both those who have applied for SSI since first being observed in SIPP (post-SIPP applicants), as well as for the smaller number who received their first payment after being observed (post-SIPP recipients).

The matched data show there was a substantial intersection between the populations served by SSI and AFDC at the time the SIPP data were collected, especially among young women and children. They also show that the extent of the intersection grew over the 1990–1993 period and beyond; i.e., that there was a substantial shift from AFDC participation to SSI participation. While young female SSI recipients during the sample period were similar to young male recipients as well as older recipients in many respects, they were much more likely to be living with their own children, to have received AFDC benefits in the past, and to live in a family that was concurrently receiving AFDC benefits. Further, the share living in an AFDC family increased over the period. Post-SIPP applicants and recipients in the young-female group were both more likely than existing SSI recipients to have received AFDC benefits in the past.

Patterns are similar for children. Over half of all SSI children in the 1990–1993 period lived with just one parent, and a large share lived in an AFDC family. The share living in an AFDC family when first observed in SIPP is even higher among post-SIPP applicants and recipients.

The data also show that substantial numbers of young female and child AFDC recipients reported a disability when observed in SIPP. While the shares of AFDC recipients reporting a disability are much smaller than for SSI recipients in the corresponding demographic groups, the numbers with disabilities are large because these shares apply to large numbers of recipients. Further, it is clear from the disability information for those respondents who were SSI recipients when observed that disability is substantially under-reported in SIPP, especially for children.

Most of the findings in the assessment of target and comparison groups are discouraging, and we conclude that defining deterministic target and comparison groups is quite problematic. While it might be reasonable to make comparisons between low-income parents with disabilities and non-parents with disabilities, this would ignore a substantial share of those targeted by non-SSA welfare reforms that might apply for SSI.

At the end of the last chapter, we concluded that it is misleading to think of the years from 1988 to 1996 as a "baseline" against which to measure the impact of the reforms. The analysis

presented here reinforces this conclusion. It appears that substantial numbers of adults and children were shifting from participation in AFDC to participate in SSI well before the reforms that began in 1996. It is not clear that participation patterns had reached any sort of long-run equilibrium prior to the reforms, or that the forces behind participation shifts had stabilized in any meaningful sense. An evaluation can ultimately compare participation patterns after the reforms to "counterfactual" participation patterns that are projected from the pre-reform data, but the dynamics of the pre-reform period place a heavy burden on the modeling effort required to make credible counterfactual projections.

B. Hazard Analysis of SSI Applications and Allowances

The estimates of hazard models for first SSI applications and allowances that are presented in this chapter demonstrate the feasibility of estimating such models using pooled SIPP/SSA administrative data, and also provide some interesting findings. The models provide important information on the effects of individual level factors on applications and allowances, but are limited in estimating effects of state-level factors (e.g. state AFDC program changes). Our results also reinforce the conclusion that it is problematic to use the experience just prior to the reforms of 1996 as a baseline for post-reform experience.

In general, many characteristics of individuals in low-income families that were observed when each SIPP respondent was first interviewed are predictive of first applications and allowances, and their coefficients' signs are generally what we would expect. Disability and health variables are especially predictive, but education, family status, program participation and income variables also have substantial predictive power. For children, parental characteristics are important predictors.

We find that first SSI applications and allowances from young women and, to a lesser extent, children are positively associated with current and/or past AFDC participation after controlling for the other explanatory variables. We do not find an effect for young men, but this likely reflects the relatively small number of young men who reported current or past AFDC participation.

We also attempted to identify the effects of some state-level variables on applications and allowances. The economic and program variables in most cases had insignificant coefficients. Our experimentation with state dummies for specific AFDC reforms yields similarly unsatisfactory results. Our impression is that further development of the models in this direction will not be very fruitful, because there are very small numbers of SIPP respondents who filed a first SSI application or received a first allowance in each state during each year. Further, because TANF reforms vary substantially by state in their nature and timing, we conclude that future analysis of the SIPP/SSA matched data is not likely to produce findings of changes in SSI applications and allowances that can be closely tied to TANF.

In one specification that allows for temporal shifts in the hazards for "high probability" AFDC participants relative to low probability AFDC participants, we find evidence of a substantial upward shift in both the application and allowance hazards for the former relative to the latter from 1991 through 1995, for young women and children. It appears that in 1996 the relative hazards for high and low probability AFDC cases were approximately the same as in 1990.

Similar results were not found for men, but there were too few male AFDC participants in the sample to obtain a meaningful result.

In another specification for young men and young women, we allowed for temporal shifts in the hazards for those living with their own minor children relative to those who were not, other things constant, and a similar pattern of shifts emerged for both men and women in the application equations. That is, application hazard rates increased for those with children relative to rates for those without children during the 1991 to 1995 period, but essentially returned to their 1990 relative values by 1996. A similar finding was obtained for young women in the allowance equation, but for men the finding was essentially the opposite – a downward shift in allowances for men living with children relative to others. This last finding is puzzling.

This evidence provides additional support for the conclusion that a variety of factors caused a shift in participation from AFDC to SSI among young women and children during the pre-reform period. The application equation estimates for young women and men discussed in the previous paragraph suggest that for young women the shift had as much to do with whether they were living with their children as it did with AFDC participation. Spillover effects from *Zebley* seem a likely explanation, but administrative changes to the program, as well as various outreach efforts and the economy, may have had a disproportionate effect on applications from parents.

The estimates of the models in which we allowed for shifts of the hazards for high probability AFDC cases relative to low probability cases, or of the hazards for young adults living with children relative to those not living with children, illustrate the feasibility of estimating models in which hazard rates for one population increase relative to those for another. Because the reforms associated with TANF are much more likely to impact SSI applications and allowances from high probability AFDC/TANF cases than from low-probability cases, it may be worthwhile to pursue an evaluation option that takes this approach in the future. It should be noted, though, that this approach by itself would not be able to cleanly distinguish between the effects of welfare reforms on the relative hazard rates and the effects of other factors that may well change in the future.

One other factor that needs to be considered in any future analysis is the diversionary effects of TANF reforms. Presumably many potential TANF recipients are being diverted away by states, and some are likely being diverted to SSI. Hence, individuals "shifted" from TANF to SSI might never actually appear in TANF caseloads. Use of a probability of AFDC participation model estimated from pre-reform data will address this issue, although early diversionary efforts in some states could make this problematic. Use of a living with children indicator might be preferred for this reason.

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